Service Bulletin

JAGUAR Daimler

Date MARCH 1984
Sheet **1 of 3**
Bulletin JD 03/84

ITEM 14

00 AMENDMENT

SERIES III XJ6

With reference to Item 76 JD 12/83 crankshaft and bearing failures. Please note the introduction points for 'B' emission sursulf hardened crankshafts should read as follows:

8L 148896 – XJ6
7M 4796 – Limo

ITEM 15

00 WARRANTY CODES

SERIES III 4.2/5.3/XJS HE (WHERE APPLICABLE)

During recent monitoring of Service Warranty Claims/Returns, in particular problems relating to Air Flow Meter Hoses split or adrift, and headlamp adjustment, investigations have been impeded by incorrect warranty codes being quoted.

Will Dealers please note that for the above mentioned problems the correct codes to be utilized are as follows:

Air Flow Meter Hose	–	Adrift	=	2F2 B
Air Flow Meter Hose	–	Split	=	2F2 E
Headlamp Unit	–	Adjusted	=	7J1 A

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ITEM 16

03 REPAIR OPERATION TIMES — XJ-S 3.6/XJ-SC 3.6

Service Times and Option Service Times for the new XJ-S 3.6 and XJ-SC 3.6 are quoted below. There are no differences in Service Times or Option Service Times between the two models.

INTERVAL	SERVICE TIME	OPTION SERVICE TIME
1,000 miles	3.45 hrs	–
7,500 miles	3.20 hrs	0.90 hrs
15,000 miles	4.45 hrs	0.25 hrs
22,500 miles	3.20 hrs	0.90 hrs
30,000 miles	5.35 hrs	0.25 hrs
37,500 miles	3.20 hrs	0.90 hrs
45,000 miles	4.50 hrs	0.25 hrs
52,500 miles	3.20 hrs	0.90 hrs
60,000 miles	5.35 hrs	0.25 hrs
67,500 miles	3.20 hrs	0.90 hrs
75,000 miles	4.45 hrs	0.25 hrs
82,500 miles	3.20 hrs	0.90 hrs
90,000 miles	5.40 hrs	0.25 hrs
97,500 miles	3.20 hrs	0.90 hrs

Use current Supplementary Job Sheets for these services.

No other Services Times or Option Services Times are affected.

ITEM 17

12 ENGINE "GROAN" ON INITIAL START UP — 5.3 MODELS

Reports have been received of an engine noise on V12 engines described as a "groan" on initial start up when the engine is cold. This is a standard feature, although it may not affect every engine. It is caused by the oil pump purging air out of the lubrication system which can enter the system after the engine has stopped.

It is not detrimental to the running/performance of the engine and disappears very quickly after starting.

NOTE: Any noise which persists for a significant length of time should be investigated further.

ITEM 18

12 'E' EMISSION ENGINES — SERIES III XJ6

MIDDLE EAST MARKETS (BAHRAIN, KUWAIT, LEBANON, OMAN, QATAR, SAUDI ARABIA, UNITED ARAB EMIRATES)

To accommodate the introduction of the evaporative loss system detailed in Service Bulletin JD 01/84 Item 01, all XJ6 vehicles supplied to Middle East markets are now fitted with 'E' emission specification engines. In addition to a thermal vacuum valve, and throttle edged vacuum source for the evaporative loss system, 'E' emission engines also incorporate standard compression pistons (Part No. EAC 2042).

'E' emission 6 cylinder engines were introduced for the above markets at VIN 380366.

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ITEM 19

19 CRUISE CONTROL SERIES III 4.2 EFI

Would Distributor/Dealers please note that if they are involved with the installation of an Econocruise after sales cruise control kit Part No. 2.5042 as specified for Jaguar Series III 4.2 EFI Models, it is ESSENTIAL that the instructions regarding the fitment of the Econocruise throttle lever, and bowden cable brackets, reference kit part number 236, are followed carefully (See Fig. 1).

IMPORTANT: FOLLOWING INSTALLATION, IT IS ESSENTIAL THAT A FULL OPERATIONAL CHECK IS CARRIED OUT. THIS IS TO ENSURE THAT THE MOVEMENT OF THE ECONOCRUISE THROTTLE CABLE DOES NOT COME INTO CONTACT WITH THE FUEL INJECTION FUEL RAIL HOSES, AS EXPLAINED IN THE FITTING KIT INSTRUCTIONS.

SHOULD ANY PROBLEMS ARISE THROUGH A FAILURE TO COMPLY WITH THE FITTING INSTRUCTIONS OR OTHERWISE, THE RESPONSIBILITY LIES SOLELY BETWEEN THE DISTRIBUTOR/DEALER AND ECONOCRUISE LTD.

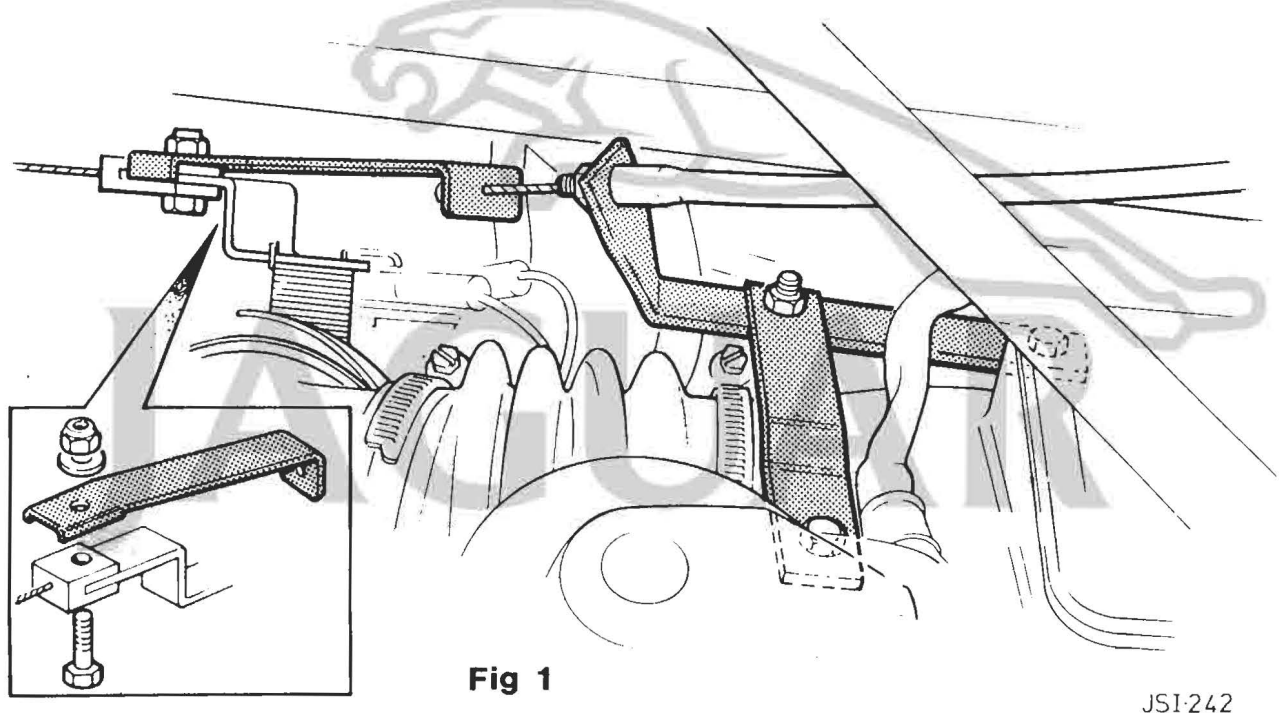

Fig 1

JSI-242

ITEM 20

26 RADIATOR HOSE 5.3 MODELS

Several reports have been received of radiator hoses splitting on the above models, especially the top hose. Investigations with the supplier have attributed this to delamination of the hose material, resulting in bursting of the hose. All suspect hoses have been removed from production and Unipart stocks.

Radiator hoses are quality assured from VIN's:

373192 – Series III
113471 – XJS

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ITEM 21

26 WATER PUMP LEAKAGE — XJ6/SERIES III

Investigations into XJ6 water pump leakage have revealed a problem with the machining of the seal seat in the water pump body, which could allow movement of the seal.

This has now been corrected and water pump seal location is assured from Engine Nos:

8L 146844 – 4.2
8A 14618 – 3.4
7M 4766 – Limo

ITEM 22

44 BORG WARNER MODEL 66 – SUN GEAR SHAFT — SERIES III/XJ6

Further to Service Bulletin JD 03/83, detailing a material specification change of the sun gear shaft from SAE 8620 to EN 36B, the sun gear shaft sealing ring grooves are now shot peened to relieve any possible stress points.

This modification was introduced at:

ENGINE NO.	TRANSMISSION NO.	MODEL
8L 143470	6066 39459	4.2
8A 14592	6067 4284	3.4

ITEM 23

82 AIR CONDITIONING EVAPORATOR — SERIES III – XJS 'HE' (AIR CONDITIONED MODELS)

Air conditioning units are now received from the supplier with the evaporator assembly dehydrated and pressurised. Units to this condition were introduced at VIN:

347244 – Saloon
108046 – XJS

As a result of this improvement it has been necessary to modify the air conditioning unit case to enable the evaporator unit to be fitted by the supplier without disturbing the expansion valve assembly. Modifications have entailed the relocation of the evaporator/ expansion valve mounting plate fixings on the air conditioning unit case, see Fig. 1.

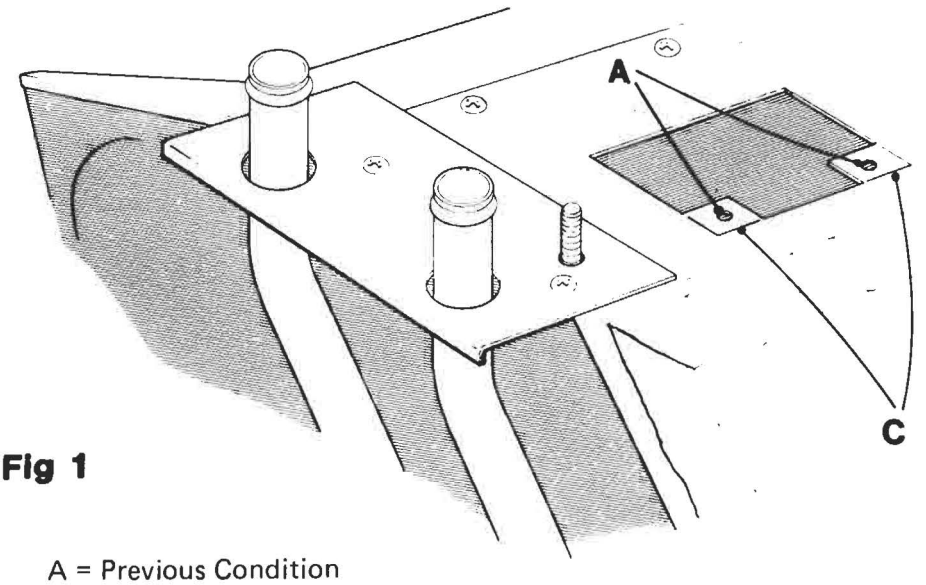

Fig 1

A = Previous Condition

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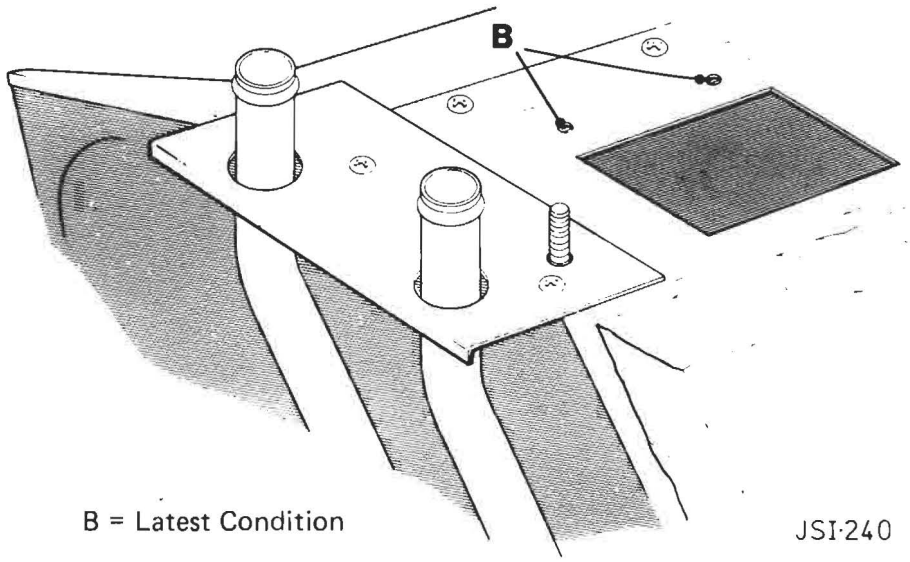

B = Latest Condition JSI·240

For parts replacement purposes, only evaporator/expansion valve assemblies to the latest condition are available. Should replacement be required on vehicles prior to the above VIN's, the following modification will apply. Evaporator/expansion valve assembly part number remains unchanged AEU 1191.

MODIFICATION PROCEDURE

1. Following removal of the air conditioning assembly and subsequently the evaporator unit, carefully cut off the metal flanges, see Fig. 1 (C).

2. Mark and drill the unit case to the dimensions detailed in Fig. 2.

3. Following completion of procedures 1 and 2, ensure all swarf is removed prior to re-assembly.

4. Locate new evaporator/expansion valve assembly and secure.

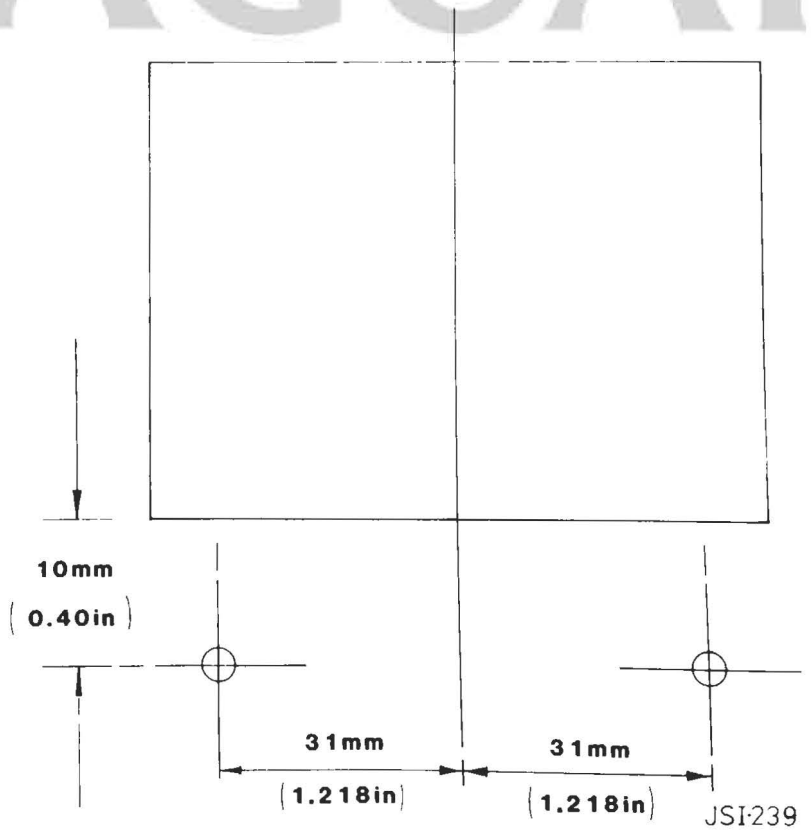

Fig 2

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ITEM 24

84 WINDSCREEN WASH/WIPE RESERVOIR GAP — XJS

The metal cap (Part No. GWW 968) for the windscreen wash/wipe reservoir was replaced by a plastic cap (Part No. GWW 933) at VIN 108985. The plastic cap is available from Unipart as a separate item. It is interchangeable with the metal cap up to VIN 110190, at which time the windscreen wash/wipe reservoir and cap were replaced by a revised design.

ITEM 25

88 OIL PRESSURE TRANSMITTER — SERIES III & XJS 'HE'

Investigations into isolated instances of oil pressure gauge inaccurate readings, due to a malfunction of the engine pressure transmitter unit, have identified the following fault.

During the manufacturing process, the transmitter lock screw is secured by "Parapan Lacquer". Service units examined were found to have the internal diaphragm impregnated with this lacquer, causing it to stick, and subsequently result in an inaccurate gauge reading.

Action to correct this production assembly fault has been assured from supplier date code Wk. 46.83, and progressively introduced from VIN's:

378920 – Saloon
114671 – XJS

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ITEM: 11

00 AKM 9006 SERVICE MANUAL — S.III

An updated version of AKM 9006 Service Manual for S.III Models in English language, is now available from Jaguar Parts Operations. Unlike the original Manual this is available only as a complete book. Individual books within the manual are not available separately.
Individual books for Edition 1 of the Manual may still be purchased from Jaguar Parts Operations while stocks last.

ITEM: 12

03 PROPSHAFT REPAIR TIMES — XJS CABRIOLET

Please add the following Repair Operation Times to your XJS Repair Time Schedules:

		V12	3.6
47-15-01	Propeller Shaft - Renew	2.34	0.95
47-15-10	Propeller Shaft - Overhaul	3.40	2.00

No other Repair Times are affected.

AKM 4412/83 - English
AKM 4051/83 - Italian
AKM 4446/83 - Dutch
AKM 4447/83 - French
AKM 4448/83 - German
AKM 4494/83 - Spanish

ITEM: 13

12 CRANKSHAFT FRONT SEAL — S.III XJ6/LIMO

A new crankshaft front seal incorporating a PTFE sealing lip has been introduced on all 3.4 and 4.2 litre engines from Engine Nos:

8A 16541 - S.III 3.4
8L 203238 - S.III 4.2
7M 5211 - Limo.

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The new seal is available under Part No. EAC 8815 and is supplied on a mandrel which should not be removed until immediately prior to fitting the seal. This seal should now be used for all XK crankshaft front seal replacements and should be fitted in conjunction with a new distance piece (Part No. C40147) and 'O' ring. When fitting the new seal please note the following and refer to Repair Operation 12.21.14 in the Workshop Manual:

1 This seal is designed to operate without an oil flinger behind the seal and it will therefore be necessary to remove this where fitted. As the flinger cannot be withdrawn from the crankshaft with the timing cover in place, cut into the notches with suitable metal shears and discard the segments.

2 Fit the seal dry, as supplied, taking care to avoid contact with the sealing lip. Do not degrease the seal as this will damage the material.

3 When fitting the new distance piece lubricate with clean engine oil. Do not use grease.

4 When refitting the sump, apply a small bead of RTV sealant compound to both sides of the sump face at the seal aperture joint, and torque the sump fixing nuts and bolts to 20 nm (15 lb ft).

ITEM: 14

12 CYLINDER HEAD GASKET S.III XJ6 3.4

To overcome instances of external coolant seepage from the cylinder head/cylinder block joint, an improved cylinder head gasket, Part No. EAC 8349, has been introduced on 3.4 litre engines from Engine No. 8A 16376.

ITEM: 15

12 ENGINE REAR MOUNTING SPRING S.III XJ6

Due to instances of a 'knock' from the prop shaft area caused by excessive movement of the transmission rear mounting, a revised gearbox rear mounting spring has been introduced. This spring, Part No. C45902/1 is now painted black and replaces the previous plastic coated spring, Part No. C45902. It was introduced at VIN 442669.

ITEM: 16

12 ENGINE STALL S.III XJ6 4.2

ALL MARKETS EXCEPT USA, AUSTRALIA, CANADA, JAPAN, SWEDEN, SWITZERLAND

Further to Service Bulletin JD 08/84 Item 65, the modification incorporating the supplementary air valve to overcome engine stall, has now been introduced on production built vehicles from VIN 443387.

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ITEM: 17

19 ELECTRONIC CONTROL UNIT — S.III V12/XJS V12 (EMISSION "B" ONLY)

To improve the reliability of the fuel injection system, a new digitial microprocessor electronic control unit has been introduced on S.III V12 and XJS V12 emission "B" models only from VINs:

441593 - S.III V12
127879 - XJS V12

Interchangeability with the previous type control unit is not affected.

A further Service Bulletin will be issued advising part number allocation and parts stock availability.

ITEM: 18

51 DIFFERENTIAL PINION SEAL — S.III/XJS 3.6/LIMO

Further to Service Bulletin JD 08/85 Item 57, the new pinion seal, Part No. JLM 527, has now been introduced on all remaining GKN axle ratios from unit number 85N 5701 and progressively introduced at Jaguar from VINs:

129526 - XJS 3.6
446153 - S.III
200821 - Limo

ITEM: 19

76 GEAR LEVER GAITER — S.III XJ6

To prevent gear lever 'sizzle' on manual transmission XJ6 vehicles, a revised gear lever gaiter, incorporating a rubber 'O' ring and retaining ferrule, was introduced on 1986 M.Y. vehicles. This gaiter is available under Part No. BBC 8602.

ITEM: 20

79 PAINT RECTIFICATION-CRAZING/CHECKING — ALL MODELS

This Bulletin has been prepared primarily to provide Jaguar Dealers/ Importers with guidelines for use when carrying out paint rectification on vehicles affected by crazing/checking.

Jaguar are aware of the need for the refinisher to repair first time, any damaged paint work, so the correct approach and diagnosis is vital if this is to be achieved. This is particularly important where major rectification is necessary as errors can prove costly.

GENERAL POINTS

1 Film build depth is critical on thermo-plastic acrylic (T.P.A.) finishes. Jaguar recommend 150-200 microns total film at original exterior, however refinishers can allow up to 250 microns on a sound substrate.

2 Refinishers must use recommended materials from Jaguar approved suppliers.

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United Kingdom and Europe:- Inmont, I.C.I., Ault and Wiborg, Sikkens, Dupont, Berger, P.P.G. United Kingdom and Glasurit.

U.S.A. and Canada:- Inmont/Rinshed-Mason, I.C.I/C.I.L. Ltd, Sikkens and Dupont.

Australia:- Spartan and Dulux

R.O.W:- Approved supplier materials from the above via importers or local agents. These materials may be marketed under an alternative trade name.

3 Paint supplier data sheets must be referred to with regard to viscosity, application, surface preparation and spray booth temperatures.

DEFINITION:

Crazing/checking can be categorised into three types, of which one or two may be present on a vehicle.

1 Fuel Crazing
Forms a local run pattern of fine crazing due to fuel spillage onto newly applied paint.

2 Fine Cracking/Checking
Evident on early cars, emanating from around the front and rear screens of direct glazed thermo-plastic acrylic (T.P.A.) vehicles. Small areas of fine crazing/checking are usually apparent adjacent to the cracking. Material and process changes have eliminated this problem.

3 General Crazing/Checking
Mainly affecting horizontal panels, this fault may develop in the post - warranty period if the paint film deteriorates. This fault is caused by excessive film build, incompatible materials, temperature changes, etc.

DIAGNOSIS

1 Define the extent of the fault, i.e. local, extensive, fine or heavy crazing.

2 Examine the film build thickness of the existing finish.

3 Take into consideration the vehicle colour prior to deciding the extent of rectification, e.g. to achieve a satisfactory colour match on certain metallics, local repair may have to be extended to envelop a section of the vehicle.

4 Where the crazing is severe define the depth by flatting locally and examining with a magnifying glass.

5 ALWAYS REMEMBER THAT WHEREVER POSSIBLE THE ORIGINAL FINISH I.E. ELECTROCOAT AND PRIMER-SURFACER SHOULD BE LEFT INTACT. WHERE A FAULT IS SEVERE BUT CONFINED TO HORIZONTAL SURFACES, IT MAY BE ADVANTAGEOUS TO SAND OFF TO A SOUND SUBSTRATE INSTEAD OF COMPLETELY STRIPPING TO BARE METAL.

6 The alternatives to a complete strip should always be given consideration when refinishing, as an incorrect process from bare metal will almost certainly promote future problems.

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RECTIFICATION

1 Local fine crazing/checking.
P1200 wet flat, compound and polish.

2 Fine cracking/checking (around screens)
Where this fault is evident and emanates from the screen apertures, remove the outer lace and wet flat with P800 to remove all traces of the fault. Apply an approved paint process to the affected areas.
NOTE: where the cracking affects the top of the aperture a complete roof panel respray may be necessary.

3 Local Heavy Crazing (Fuel Spilliage etc)
Wet flat locally, P800, to remove the fault and apply an approved paint process.

4 Extensive Crazing affecting the colour coat.
Use one of two methods:
a) Wash off the colour with acrylic thinners avoiding any spillage or runs onto adjacent panels.
or
b) Sand off the colour mechanically finishing off with a P600-P800 wet flat.
Following preparation apply an approved paint process.

5 Extensive Heavy Crazing of indeterminate depth.
a) Apply a chemical stripper to remove all paint to bare metal. NOTE: strippers are most effective if used in two stages:
1. Colour Removal
2. Primer and surfacer removal.
CAUTION: DO NOT APPLY STRIPPER WITHIN 25mm of PANEL EDGES, CHANNELS, GLASS OF TRIM FINISHERS.

b) Remove the paint with a scraper and/or steel wool.

c) Wash off the stripped vehicle with solvent (SBP 3 or similar) activating with steel wool to remove any residues.

d) Flat off paint from the panel edges and around the finishers. Blow off with an air gun and wash the complete vehicle with solvent.

e) Apply a phosphoric acid metal conditioner to the manufacturer specifications. This will remove surface contamination and etch the metal surface to assist paint adhesion. NOTE: this operation is most important.

f) Wash off the activated conditioner with clean water and dry off thoroughly with chamois leather and air gun.

g) Ensure the prepared surface remains uncontaminated by fingermarks etc, and apply an approved 2 pack etch primer to the bare metal.*

h) It is <u>essential</u> that a suitable primer-surfacer is applied within one hour of the etch-primer or blistering may occur.*

i) Following preparation apply an approved paint process.

* NOTE: These operations must be carried out in a temperature controlled spray booth.

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XJS

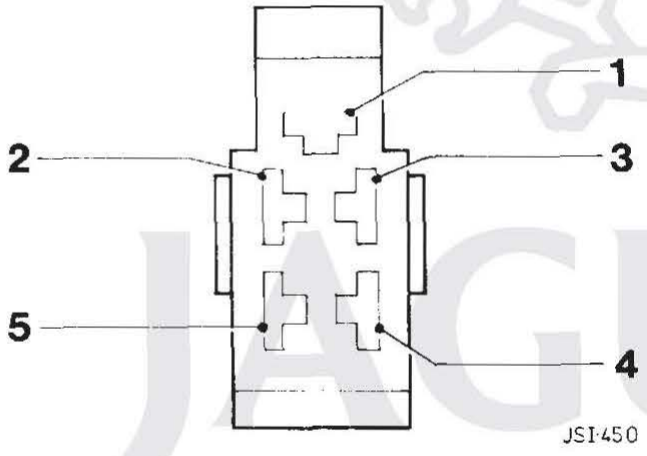
84 WINDSCREEN WIPER MOTOR — PRE HE MODELS

Following the conversion on Pre XJS HE Models, of the windscreen wiper system using Service Kit AEU 1731 and motor assembly AEU 1738 (Service Bulletin JD 11/81 Item 83 refers), several Dealers have experienced the problem of the circuit fuse continually blowing.

Investigations have identified that certain AEU 1731 kits were equipped with an incorrect adaptor harness which caused a short curcuit to occur when fitted.

Parts stock of this component has now been checked and suspect stock removed. In the event that stock may be held by Dealers, kits should be checked to ensure that the correct harness has been supplied.To clarify this, Dealers should check the colours of the wiper motor plug connector wires.

Correct Condition



1) = Red Light Green

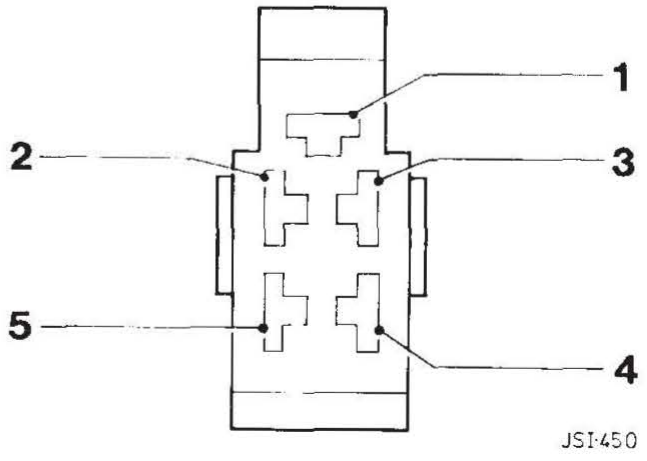
2) = White Light Green

3) = Yellow Light Green

4) = Blue Light Green

5) = Light Green

Incorrect Condition



1) = White

2) = Red

3) = Yellow

4) = Brown

5) = Green

Kits identified with the incorrect harness included, should be returned through the normal Parts D.Y. Return System.

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ITEM: 22

86 ALTERNATOR S.III V12

A revised A133-75 amp alternator and alternator harness have been introduced on S.III V12 Models from VIN 425413.

The revised alternator incorporates a single eyelet connector which replaces the previous Lucar terminals.

For introduction details on:- S.III XJ6 Air Con Models, Service Bulletin JD 04/85 Item 30 refers.

XJS V12 models, Service Bulletin JD 09/85 Item 69 refers.

ITEM: 23

88 SPEEDOMETER TRANSDUCER S.III/XJS

Instances of electronic speedometer signal transducers becoming loose and possibly detached from the transmission housing, have been identified in Service.

Production procedures have now been corrected and security of the unit assured from VINs:

444581 - S.III
128950 - XJS

To ensure that transducer units are secured correctly on vehicles prior to the above vehicle identification numbers, Dealers will be requiried to check all new vehicles at P.D.I. and those in service at the next service interval.

The knurled locking ring may be GENTLY tightened using a suitable adjustable spanner. Do not overtighten as this will result in damage to the transducer unit.

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ITEM: 45

17 EMISSION 'F' — S.III 4.2/ALL V12

AUSTRIA, GERMANY AND SWITZERLAND

To satisfy legislative market requirements a revised engine specificiation for the above markets has been introduced. This incorporates an emission type 'F' engine with stellite seat valves and emission equipment changes to suit unleaded fuel.

A summary of the emission equipment by market is tabulated below:

	A	B	C	D
Germany				
S.III 4.2		X	X	X
S.III V12/XJS V12		X	*	X
Austria, Switzerland				
S.III 4.2	X	X	X	X
S.III V12/XJS V12	X	X	X	X

A - Underfloor Catalyst
B - Downpipe Catalyst
C - Air Injection
D - Oxygen Sensor
* - To rationalise build. Fitted to first cars only; not required on subsequent builds.

The engine idle and ignition setting should be checked against the following values:

S.III 4.2 Austria, Germany and Switzerland	Idle speed 750 - 850 rev/min Ignition Timing 16-18° BTDC at 800 rev/min with vacuum disconnected
S.III V12/XJS V12 Austria, Germany and Switzerland	Idle speed 650-850 rev/min. Ignition Timing 15-17° BTDC at 3,000 rev/min with vacuum disconnected

These changes have been introduced from engine numbers:

8L 209816 - S.III 4.2
7P 55737 - S.III V12
8S 43250 - XJS V12

Further details and part numbers will be issued as parts are available.

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ITEM: 46

74 ALLOY ROAD WHEELS — SIII/XJS

A small batch of vehicles fitted with alloy road wheels and Pirelli tyres, recently despatched from the factory, are subject to reports of white staining of the protective lacquer.

This has been caused by the solvent used by the supplier to clean the wheel prior to application of the balance weights not being to specification.

This staining should be removed at P.D.I. stage, by buffing the area with a pad lightly moistened with Ethyl Methyl Ketone (MEK).

When using this chemical the following precautions MUST be strictly adhered to:

* Highly flamable - DO NOT USE whilst standing near a naked flame or smoking.

* DO NOT INHALE - Only use in a well ventilated area.

* Avoid contact with the skin and eyes - wear protective clothing, e.g. gloves, glasses, etc.

ITEM: 47

76 SEAT BELT SLIDER BAR — XJS

To assist occupants with the fitting of XJS seat belts, Jaguar have carried out a modification to the fixed anchorage point. A bar has been installed which is secured to the sill at its forward position and is located in an aperture situated in the heel board panel at its rear location.

The seat belt has a stitched loop which passes over the slider bar prior to fitment into vehicle. This loop allows fore and aft movement of the seat belt to be achieved.

100% fitment to Coupe models is assured from VIN 131010.

The Cabriolet will also be fitted with this modification from early August on 1987 M.Y. vehicles (introduction VIN to be advised).

NOTE: This is an Engineering Design modification and cannot be fitted to pre-modification vehicles.

To fasten the seat belt pass a hand back along the sill, grasp the belt and pull forward. Transfer the belt to the other hand, pull across the body and fasten in the normal manner.

ITEM: 48

80 PLENUM GRILLE — S.III

The plenum grille is located by two push fit retention pegs (see illustration) located in two friction bushes.

It is possible to damage the plenum grille using an incorrect method of removal, i.e. levering the grille free at the extreme ends.

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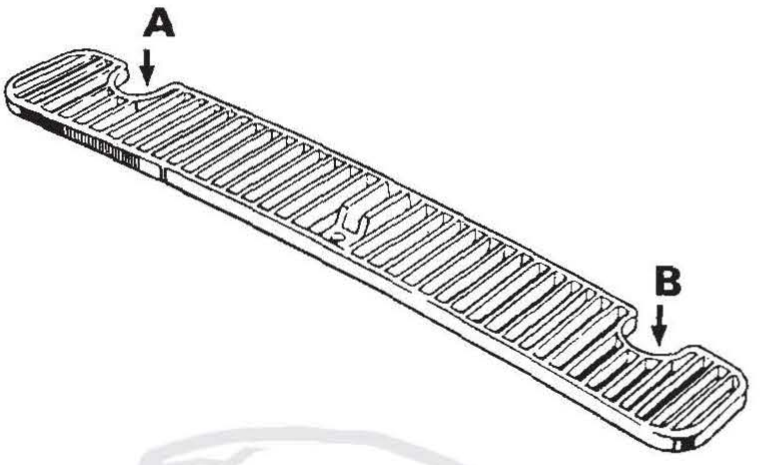
To avoid damage, use a screwdriver with a narrow blade covered with cloth (preventing damage to grille paintwork), inserted at location A or B, between the plenum grille and panel. Gently lever the grille forward and up until the retention peg is free of the bush.



JSI-477

Repeat the above procedure for the remaining retention peg location to complete removal.

ITEM: 49

82 MK III AIR CONDITIONING UNIT S.III V12/XJS

Jaguar will be introducing a new air conditioning system for the above models shortly. The following information is provided to allow technicians to develop an early appreciation of its features and functions prior to the release of further documentation.

The concept of this sophisticated air conditioning system has been developed to increase performance and reliability. To achieve this, mechanical components are kept to a minimum.

ELECTRONIC CONTROL MODULE

The control module is a computer at the heart of which is a digital microprocessor. It receives data signals from driver operated switches, then by comparing this data with data received from various temperature sensors and feedback sensing devices, it calculates the output voltages needed to operate the blower motors, flap servo motors, compressor and vacuum solenoids to achieve the temperature requirement selected for the vehicle.

Although the control module cannot be repaired in service, a set of test pins are accessible for testing the various circuits by the use of a digital multimeter. GREAT CARE MUST BE EXERCISED WHEN USING THE TEST METER. THE CONTROL MODULE WILL BE IRREPARABLY DAMAGED SHOULD ANY OF THE TEST PINS BE MOMENTARILY SHORTED TOGETHER. This technique should only be used until the new Jaguar Diagnostic System is available, which is designed to test Mk.III Air Conditioning fully and comprehensively.

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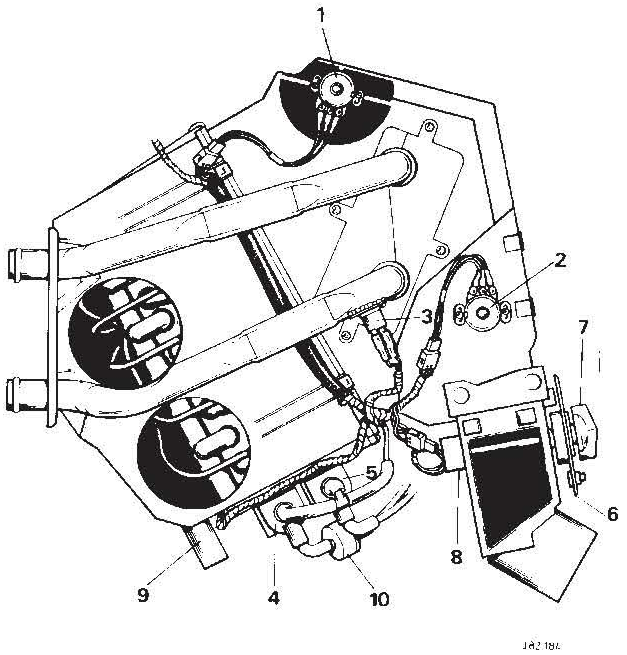
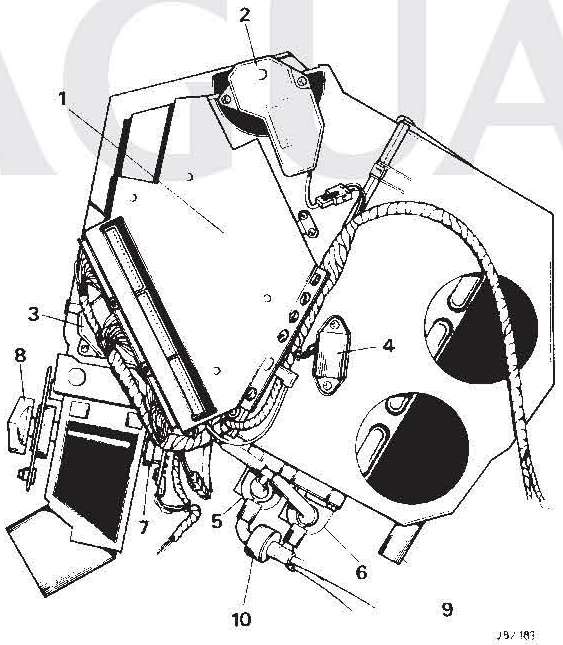


1. Upperfeed Back Potentiometer
2. Lowerfeed Back Potentiometer
3. Water Temp. Switch
4. Recirc. Vacuum Solenoid
5. Water Valve Vacuum Solenoid
6. Differential Temp Control
7. Temp. Demand Control
8. Temp. Demand Potentiometer
9. Condensate Drain Tube
10. Recirc. Solenoid Vacuum Restrictor

FIG 1 AIR CON UNIT LH SIDE



1. Control Unit
2. Upper Servo Motor
3. Lower Servo Motor
4. Evaporator Sensor
5. Centre Vent Vacuum Solenoid
6. Defrost Vacuum Solenoid
7. Mode Switch
8. Mode Control
9. Condensate Drain Tube
10. Centre Vent Solenoid Vacuum Restrictor

FIG 2 AIR CON UNIT RH SIDE

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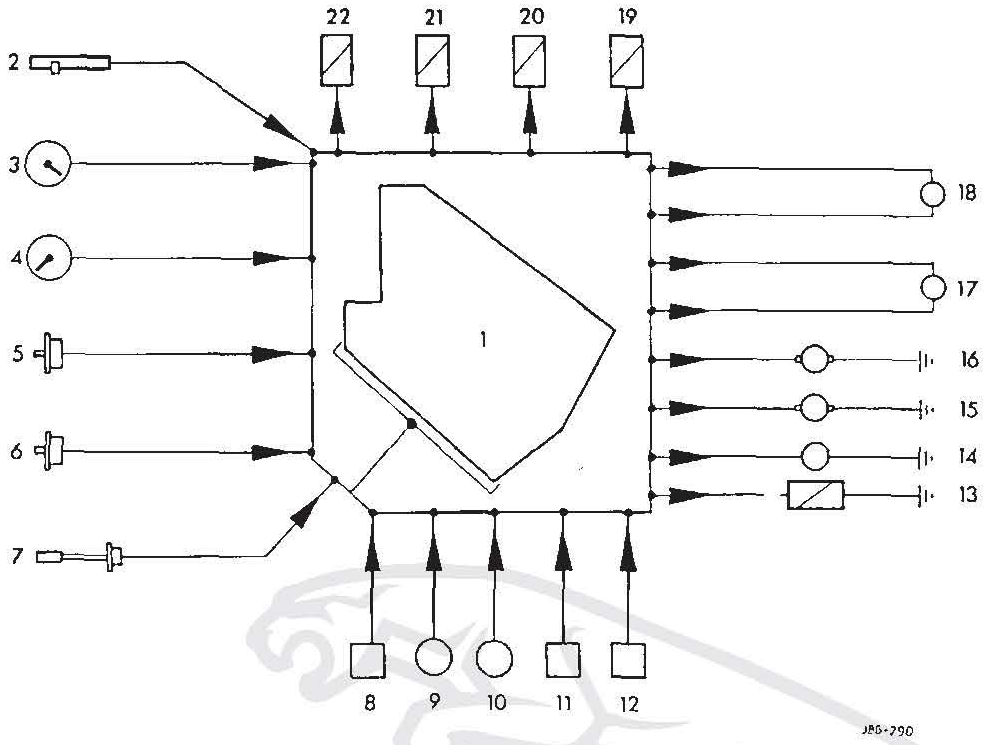

1	Control Module	12	Blower Motor Feedback
2	Differential Temperature Control	13	High Speed Relay
3	Temperature Control Switch	14	Compressor Clutch
4	Mode Control Switch	15	Blower Motor
5	Ambient Temperature Sensor	16	Blower Motor
6	In Car Temperature Sensor	17	Servo Motor
7	Evaporator Temperature Sensor	18	Servo Motor
8	Coolant Temperature Switch	19	Defrost Vacuum Solenoid
9	Flap Feedback Potentiometer	20	Recirculation Flaps Solenoid
10	Flap Feedback Potentiometer	21	Centre Vent Solenoid
11	Blower Motor Feedback	22	Water Valve Vacuum Solenoid

FIG 3

TEMPERATURE DISTRIBUTION SYSTEM

The air conditioning unit case consists of three parts, the rear of which carries the evaporator, the front is then split in two to enable the rotary flaps to be inserted.
The method used to achieve the required air temperature is known as a series parallel system. All the air into the unit passes through the evaporator, then depending on the position of the flaps either passes through the heater matrix to be heated, or bypasses the heater matrix completely, or a combination of both to achieve the air termperature required. The system employs two flaps that are driven to the required position (determined by the control system) by servo motors and gear box assemblies. The motor can rotate in either a clockwise or anti-clockwise direction depending on the direction of current flow through the motor.

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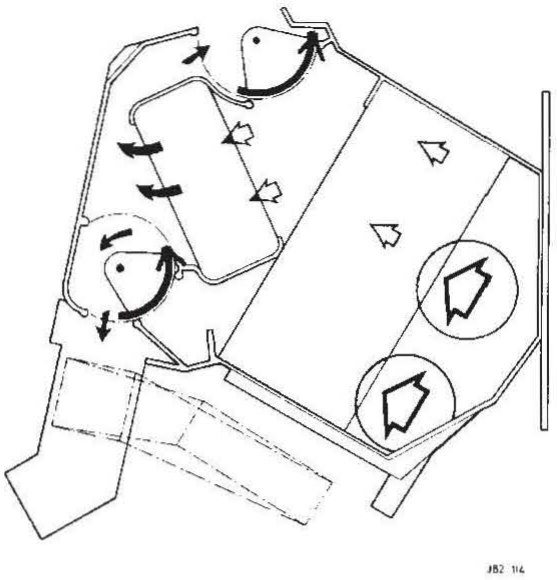

FIG 4 FULL HEATING

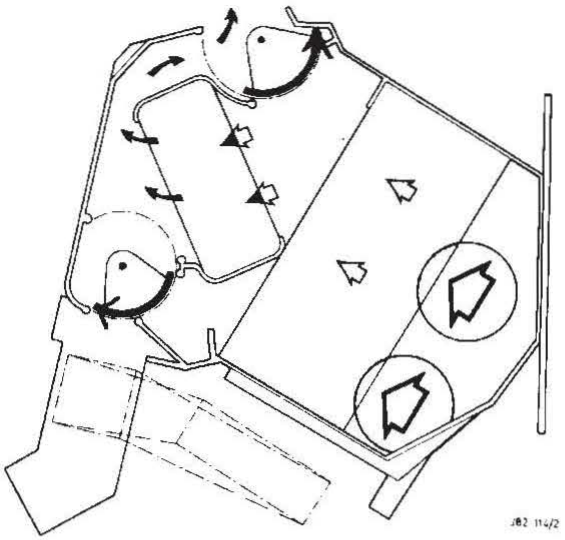

FIG 5 DEFROST

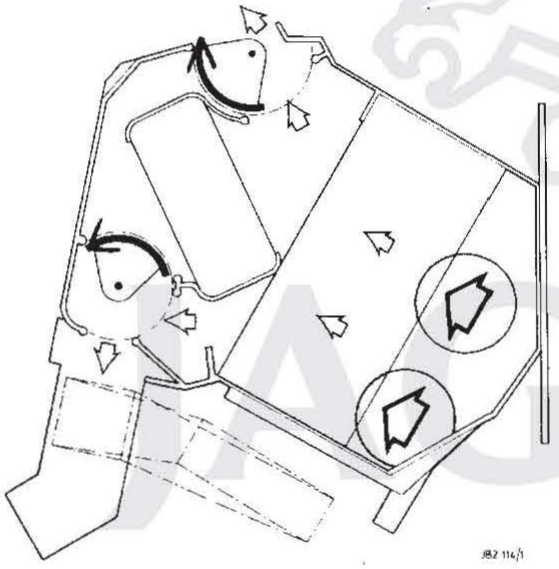

FIG 6 FULL COOLING

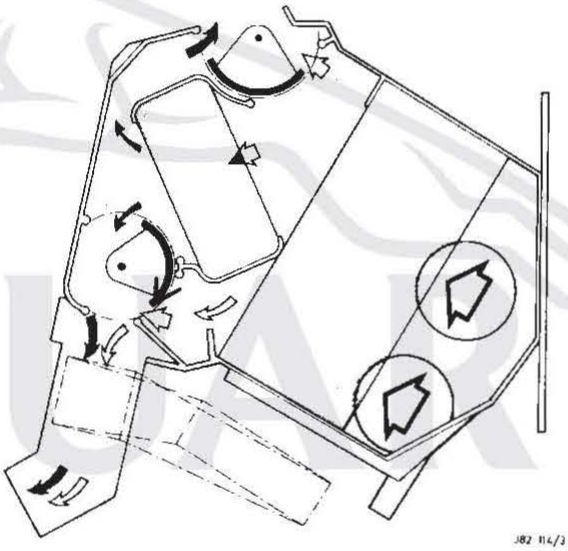

FIG 7 AIR BLEND

The flap positions are monitored by 2K2 ohm feedback potentiometers which supply voltage signals to the control module indicating the flap postions.

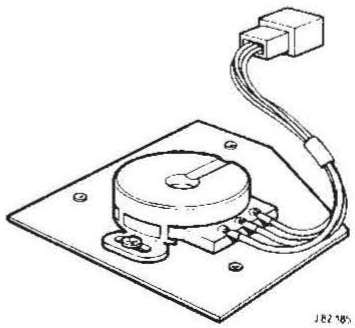

FIG 8 FEEDBACK POTENTIOMETER

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TEMPERATURE SELECTOR

The temperature requirement is selected by the setting of a 2K2 ohm potentiometer which is coupled to the temperature control switch. 5 volts is supplied to the potentiometer from pin 43 of the control module. The output voltage is from zero to 2.885 volts, which represents a range of temperatures from 19° to 29°C (66 to 84°F). The rotation of the potentiometer is restricted internally to 180° travel.

TEMPERATURE SELECTOR SWITCH - AUTOMATIC OVERRIDE FUNCTION

Incorporated within the temperature selector switch is the facility to override the automatic function. This enables the temperature to be manually selected and is achieved by pulling the left hand knob.

Engaging the manual override mode and dialling the temperature switch within the range available, allows the occupants to select the desired temperature of air entering the passenger compartment. This is permanently maintained regardless of the ambient temperature.

TEMPERATURE DIFFERENTIAL CONTROL

The slider control can be used to adjust the temperature of the air being delivered through the fascia end vents.

When the control is at the full right position, the air being delivered to the fascia end vents will be slightly cooler than that at the footwell vents.

Moving the control to the left, reduces the temperature of the air to the fascia end vents, at the full left position the air is at its coolest. This control does not affect the set in-car temperature and is most effective during 'NORM' (normal) operation of the air conditioning system.

When the system is in a heating mode, this control allows warmer air to the feet than to the face.

A 10K ohm slide potentiometer used for this purpose is coupled to the thumbwheel. Its supply voltage is from pin 7 and the signal voltage is then fed to pin 28 of the control module.

TEMPERATURE SENSORS

There are three temperature sensors fitted into the system, the ambient temperature sensor, the in-car temperature sensor and the evaporator temperature sensor. All three sensors are electrically identical, but the evaporator temperature sensor is physically different and is not interchangeable with the other two.

An input of 5 volts is supplied to the sensors from pin 43 of the control module. The temperature sensing voltage from the sensor is then fed back into the control module. At 0°C (32°F) the sensing voltage should be 2.732 volts and with a temperature rise or fall of 1°C (1.8°F) the sensing voltage should rise or fall by 0.01 volts; for example, if the temperature should rise to 5°C (41°F) from zero, the voltage will rise by 0.05 volts to 2.782 volts.

The sensor is a semi-conductor device similar to a zenor diode in as much as it allows current to flow in reverse bias. The current flow through the device varies with temperature and is very accurate over a wide range. The sensor assembly has a built in potentiometer which is preset and should not be adjusted.

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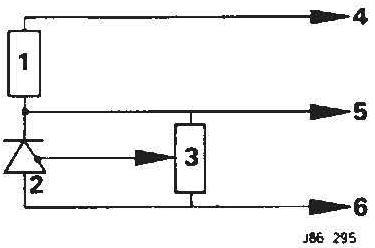

1. Resistor
2. Semi conductor
3. Potentiometer
4. Pin 43 control module
5. Sensing voltage Pin 43 ambient, Pin 5 evap. sensors
6. Earth Pin.

FIG 9 SENSOR DIAGRAM

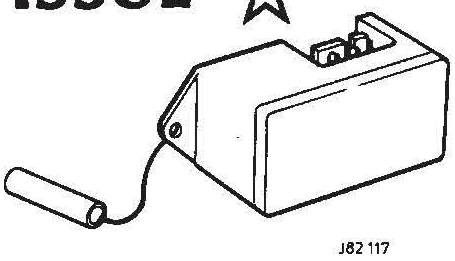

FIG 10 EVAPORATOR SENSOR

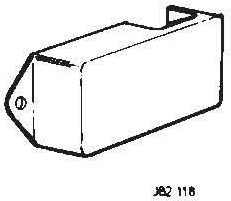

FIG 11 AMBIENT SENSOR

COOLANT TEMPERATURE SWITCH

A water temperature switch is fitted to the lower side of the heater inlet pipe. Its contacts are open at temperatures below 40°C, this prevents the fans from operating until relatively hot coolant is flowing from the engine.

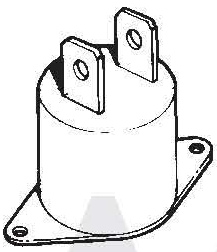

FIG 12 COOLANT TEMPERATURE SWITCH

MODE CONTROL SWITCH

This main control switch provides inputs to the control module giving information regarding the requirements of the operator.

The switch has five position:- OFF, LOW, AUTO, HIGH AND DEFROST.

In the OFF position the system is not operational, but a signal from the switch is sent to the control module to ensure the flaps in the fan motor assemblies are closed, preventing outside air from entering the system.

In the LOW, AUTO and HIGH positions, information regarding the range of fan speeds is received by the control module from the control switch, temperature selector and the various sensors. Should a low fan speed be selected the control module will maintain the speed of the fan motor within a range of low speeds depending on the temperature requirement of the vehicle. There are no steps between the fan speeds. The fan speeds are electronically controlled, and by selecting LOW, AUTO or HIGH a level of speed in the range selected is received dependent on the vehicle requirement.

When DEFROST is selected the fans are electronically controlled to operate at maximum speed, the screen vents open, maximum heating is obtained and the lower level flaps fully close (this operation can take up to a maximum period of 30 seconds).

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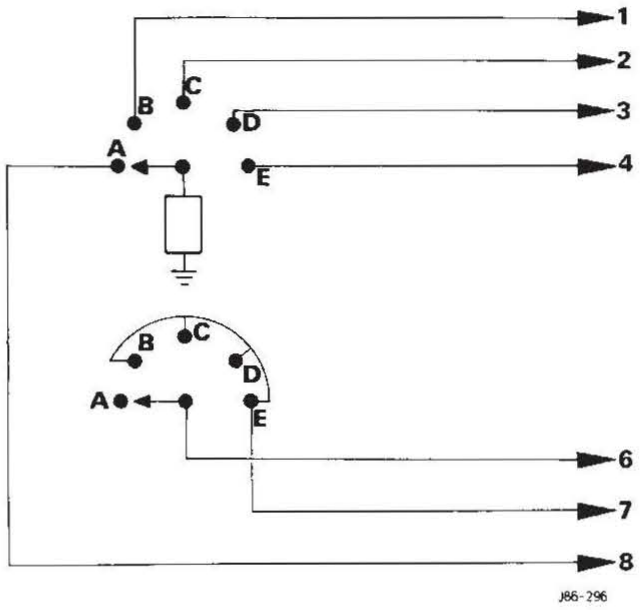

SWITCH POSITIONS

A OFF
B LOW
C AUTO
D HIGH
E DEFROST

1. Pin 13 control module
2. Pin 14 control module
3. Pin 15 control module
4. Pin 27 control module
5. Pin 1 control module
6. Pin 12 control module
7. Pin 44 control module
8. Pin 9 control module

FIG 13 MODE CONTROL DIAGRAM

BLOWER MOTOR SPEED DRIVE CONTROL

Mounted in the outlet of the blower motor units are heatsink assemblies, each of which consist of an interference suppressor diode (11 Fig.14) a feedback isolation diode (8 Fig.14) and a power transistor (9 Fig.14).

The unit is supplied with positive battery voltage via an ignition controlled fuse. With the fan motor running at high speed the relay (12 Fig.14) is energised with a voltage from pin 16 of the control module, thus closing the relay contacts. The negative circuit is therefore completed via the relay contacts.

On all the other fan speeds the negative circuit for the fan motor is via the power transistor and the control module.

The feedback diode (8 Fig.14) enables the control module to sense the voltage at the negative terminal of the fan motor and so calculate the speed of the blower motor.

VACUUM SYSTEM

The components operated by the vacuum solenoids are:-

1. Defrost/Demist flaps which are held closed by vacuum. Identified by a green supply tube.
2. Recirculation/Fresh air flaps which are held closed by vacuum. Identified by a blue supply tube.
3. Centre vent, which is opened by vacuum. Identified by a black supply tube.
4. Water valve which is closed by vacuum. Identified by a red supply tube.

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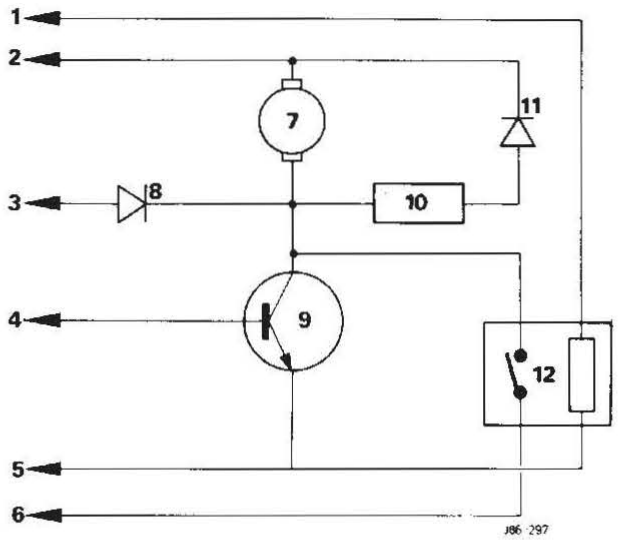

1. Pin 16 control module
2. + battery supply
3. Pin 22 or 33 control module
4. Pin 31 or 32 control module
5. Pin 45 control module
6. Earth
7. Blower motor
8. Feedback diode
9. Power transistor
10. Resistor
11. Protection diode
12. High speed relay

FIG 14 BLOWER MOTOR DIAGRAM

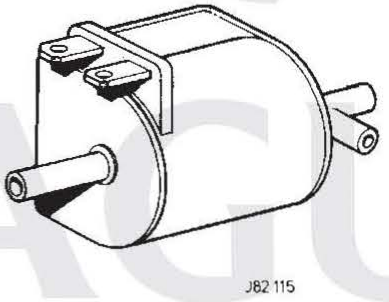

FIG 15 VACUUM SOLENOID

The vacuum supply to the recirculate/fresh air flaps and the centre vent have built in restrictors so that the operation of these flaps is slowed down to avoid the risk of the system hunting due to the rapid change caused by fast operation time. The recirculation flaps can take up to 30 seconds to change state.

COMPRESSOR CLUTCH CONTROL

The output from pin 20 of the control module is used to energise the compressor clutch relay (2 Fig.16) which will result in the relay contacts closing, allowing battery voltage to the clutch via the thermal fuse (3 Fig.16).

The control module has protection circuits built in to protect the micro-processor from damage in case of incorrect connections which may be made to the compressor clutch relay.

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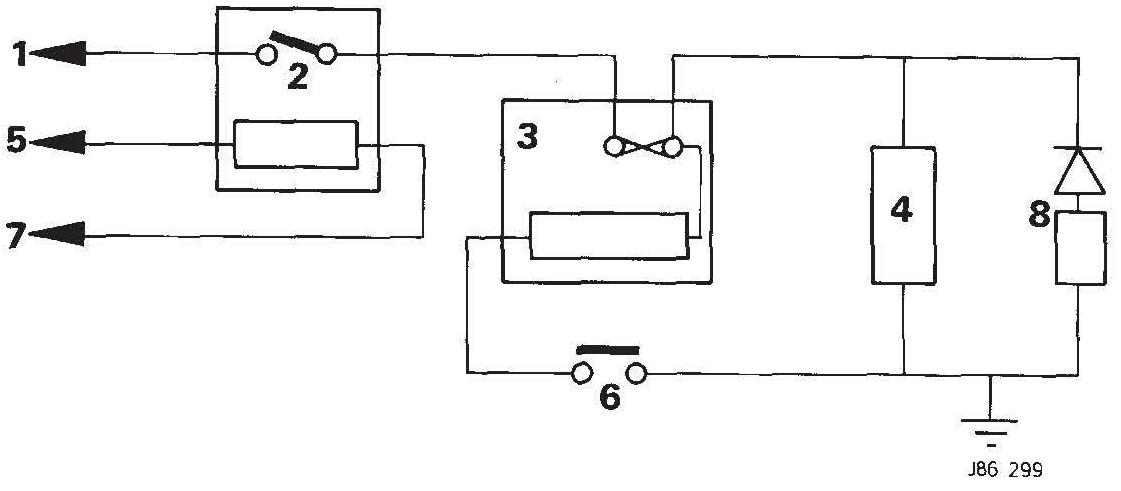

1. Positive Battery Supply
2. Clutch Relay
3. Thermal Time Fuse
4. Compressor Clutch
5. Pin 20 Control Module
6. Superheat Switch
7. Negative Pin Control Module

FIG 16 COMPRESSOR CLUTCH DIAGRAM

HIGH SIDE LOW PRESSURE (HSLP) SWITCH

Together with the introduction of the Mk III unit, a new compressor clutch protection system will be introduced.

The thermal fuse and superheat switch are deleted and replaced by a high side low pressure switch (HSLP). The superheat switch design was such that it detected pressure drop and superheated refrigerant vapour on the low pressure line. The HSLP switch is designed to monitor pressure drop on the high side line. At a low pressure condition of 25 psi $\pm$ 5 psi, the HSLP switch contacts, which are normally closed, open circuit, thus breaking the earth circuit to the compressor clutch coil; resulting in the clutch drive disengaging.

Where a definate fault is present in the air conditioning system e.g., low refrigerant, restriction, etc., the HSLP switch will remain open circuit until such time as the problem is corrected.

Following rectification and recharging of the system, the HSLP switch will return to a closed state, once again completing the clutch circuit.

The need for the thermal fuse has been obviated with this system and significant benefits are gained especially where a transient fault occurs.

This condition has been experienced in service, and in some instances has resulted in vehicles being returned several times to a Dealer for the fuse to be replaced; although at the time the air conditioning system appeared to be fault free.

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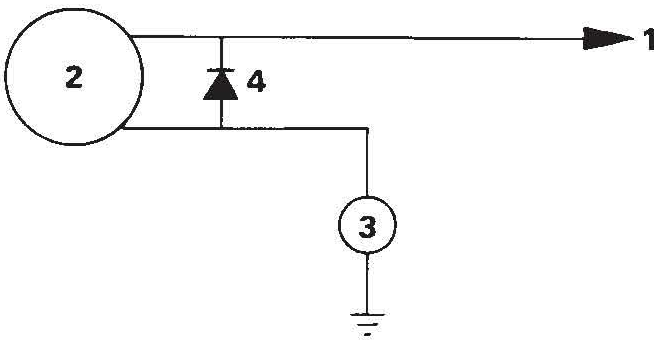

1. Clutch Relay
2. Compressor Clutch
3. HSLP Switch
4. Diode Suppression

FIG 17

SOME VEHICLES MAY STILL BE EQUIPPED WITH THE SUPEHEAT SWITCH/THERMAL FUSE SYSTEM FOLLOWING MK III LAUNCH. THE OPERATIONAL DETAILS ARE AS FOLLOWS:

SUPERHEAT SWITCH AND THERMAL FUSE

A superheat switch is included in the compressor clutch circuit to provide a compressor protection system. The superheat switch and thermal fuse guards against a low refrigerant charge or blockages causing extreme superheated refrigerant vapour conditions resulting in compressor damage. The thermal fuse is a sealed unit containing a heater and a meltable fuse. The superheat switch is located in the rear of the compressor in contact with the suction side refrigerant vapour. With a low refrigerant charge or a blockage, the pressure drops and the temperature rises. This condition closes the superheat switch contacts, which completes the thermal fuse heater circuit, melts the fuse, disconnects the battery supply to the compressor clutch winding and the thermal fuse heater. The compressor ceases to operate and damage from insufficient lubrication will be avoided.

The thermal fuse melts at 157 to 182°C.

Time taken 2 minutes - 14V system voltage.
5.5 minutes - 11.5V system voltage.

The heater resistance, cold 8 to 10 ohms.

CAUTION: After a thermal fuse melt, establish and rectify the cause before replacing the thermal fuse unit complete.

FAULT FINDING

WARNING: THE MICRO-PROCESSOR IS AN EXTREMELY SENSITIVE AND EXPENSIVE UNIT, AND SHOULD ONLY BE TESTED USING A DIGITAL TYPE MULTI-METER WITH NO LESS THAN A 3.5 DIGIT DISPLAY, AND A RESISTANCE OF NO LESS THAN 2 MEGS OHMS ANY OTHER FORM OF MULTI-METER WILL IRREVERSIBLY DAMAGE THE MICRO-PROCESSOR.

THE CONTROL PINS ARE MOUNTED VERY CLOSE TOGETHER, THEREFORE, THERE IS A HIGH RISK OF SHORTING TWO PINS TOGETHER WHEN USING A TEST PROBE.

TWO PINS SHORTED TOGETHER EVEN MOMENTARILY, WILL CAUSE IRREPARABLE DAMAGE TO THE CONTROL MODULE.

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To avoid shorting two pins together an insulated sleeve or shroud must be fitted over the probe so that it overlaps the end of the probe by approximately 3 mm (9.125 ins). The insulation stripped from a piece of cable will provide a suitable sleeve.

Always allow time for servos to come to rest.

An automatic check will require setting all sensors to a known condition, i e in workshop area at 24°C (75°F) for at least 30 minutes.

Sensor inputs will relate to ambient temperature, ie at 24°C (75°F), sensor voltage readings will be 2.97V (1mV = 1°C (33.8°F).

This technique should only be used until the new Jaguar Diagnostic System is available, which is designed to test Mk.III Air Conditioning fully and comprehensively.

SYSTEM OFF POWER SUPPLY ON	Pin No	Voltage
Ignition in	1	11 - 14V
Recirc Input	9	2 - 6V
Grounds:	2	0 - 40mV
	6	0 - 40mV
	10	0 - 40mV
	38	0 - 40mV
	45	0 - 40mv
From On/Off Switch	44	0 - 12mV
To ON/OFF Switch	12	10 - 13.3V
Set in Manual by shorting pin	19	To Ground
Select Low On Mode Switch Maximum Temperature Demand		
Low Input	13	150 - 350mv
Clutch Output (Evap Sensor below 2.720V)	20	0.6 - 11.4V
Medium Input	14	3 - 5V
High Input	15	3 - 5V
Defrost	27	3 - 5V
From On/Off Switch	44	10.3 - 13.3V
Output	43	4.73 - 5.2V
Recirc output	3	0 - 200mV
High Speed Relay	16	0 - 200mV
Water Valve Vacuum Solenoid	17	0 - 200mV
Centre Vent Vacuum Solenoid	18	0 - 200mV
Select Norm (Med or Auto) On mode Switch		
Low Input	13	3 - 5V
Medium Input	14	150 - 350mV
High Input	15	3 - 5V
Defrost Input	27	3 - 5V
Select High On Mode Switch Maximum Temperature Demand Ensure Servos Are Stationary		

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	Pin No	Voltage
Low Input	13	3 - 5V
Medium Input	14	3 - 5V
High Input	15	150 - 350mV
Defrost Input	27	3 - 5V
Select Defrost		
Low Input	13	3 - 5V
Medium Input	14	3 - 5V
High Input	15	3 - 5V
Defrost Input	27	150 - 350mV
Temperature & Diff Potentiometer Ranges		
Temperature Demand (Maximum)	35	2.665 - 3.105V
Temperature Demand (Minimum)	35	0 - 200mV
Diff Demand (Maximum)	28	4.750 - 5.250V
Diff Demand (Minimum)	28	0 - 200mV
Set Temperature Demand to Mid Range	35	1.43 - 1.45V
Select Norm		
Recirc Input	9	3 - 5V
Servo Drive Lower Flap	37	4V
Servo Drive Lower Flap	41	4V
Servo Drive Upper Flap	40	4V
Servo Drive Upper Flap	42	4V
Recirc output	3	0 - 500mV
Reference voltage	7	2.875 - 2.895V
Defrost Output	11	0 - 500mV
High Speed Relays	16	0 - 500mV
Lower Feedback Potentiometer	29	0.60 - 0.90V
Upper Feedback Potentiometer	30	1.15 - 1.45V
Coolant Temperature Input	21	260 - 460mV
Defrost Output	11	0 - 500mV
Clutch Output (Evaporator above 2.745V)	20	10.3 - 13.3
RH Blower Feedback	33	10 - 13V
LH Blower Feedback	22	10 - 13V
RH Blower Control	32	0 - 0.5V
LH Blower Control	31	0 - 0.5V
Water Valve Solenoid	17	0 - 500mV
Centre Vent Solenoid	18	0 - 500mV
Select Low On Mode switch Minimum Temperature Demand		
Set Diff to Mid Range	28	2.45 - 2.55V
Servo Stopped	37	4V
	40	4V
	41	4V
	42	4V
Lower Feedback	29	0 - 0.2V
Upper Feedback	30	0 - 0.2V
Set Temperature to Mid Position	35	1.43 - 1.45V
Servo Stopped	37	4V
	40	4V
	41	4V

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	Pin No	Voltage
	42	4V
Lower Feedback	29	0.57 - 0.87V
Upper Feedback	30	0.60 - 0.9V
Set Temperature to Maximum	35	2.665 - 3.105V
Lower Feedback	29	0.979 - 1.279V
Upper Feedback	30	1.518 - 1.818V
Set Diff to Maximum	28	4.750 - 5.20V
Lower Feedback	29	0.979 - 1.279V
Upper Feedback	30	1.340 - 1.640V

Blower Test

Set Diff To Minimum	28	0 - 200mV
Set Temperature to Minumum	35	0 - 200mV

Note: After setting allow servos to come to rest.

Typical voltage figures are in the brackets.

Mode Switch Position	RH Control Pin No 32	LH Control Pin No 31	RH Feedback Pin No 33	LH Feedback Pin No 22
Low	1 - 2V (1.77V)	1 - 2V (1.7V)	4 - 6V (5.8V)	4 - 6V (5.63V)
Med	2 - 3V (2 28V)	2 - 3V (2.27v)	3 - 5V (3.7V)	3 - 5V (3.4V)
High	1 - 2V (1.17V)	1 - 2V (1.19V)	1 - 2V (1.22V)	1 - 2V (1.27V)

	Pin No	Voltage
Set Temperature to Mid Point	28	1.43 - 1.45V

Mode Switch Position	RH Control Pin No 32	LH Control Pin No 31	RH Feedback Pin No 33	LH Feedback Pin No 22
Low	1 - 2V (1.24V)	1 - 2V (1.27V)	6.5 - 9V (8.7V)	6.5 - 9V (8.7V)
Med	1 - 2V (1.4V)	1 - 2V (1.41V)	6.9 - 9V (7.5V)	6.5 - 9V (7.5V)
High	2 - 3V (2.2V)	2 - 3V (2.2V)	3.0 - 5V (4.1V)	3.0 - 5V (4.0V)

	Pin No	Voltage
Set Temperature to Maximum	28	2.88 - 3.10V

Mode Switch Position	RH Control Pin No 32	LH Control Pin No 31	RH Feedback Pin No 33	LH Feedback Pin No 22
Low	1 - 2V (1.67V)	1 - 2V (1.63V)	6.5 - 9V (6.25V)	6.5 - 9V (6.1V)
Med	2 - 3V (2.17V)	2 - 3V (2.1V)	3.0 - 5V (4.25V)	3.0 - 5V (4.2V)
High	2 - 3V (2.3V)	2 - 3V (2.3V)	3.0 - 5V (3.7V)	3.0 - 5V (3.5V)

	Pin No	Voltage
Open The Water Temperature Switch Leads		
Set Temperature to Mid Point	35	1.43 - 1.45V
RH Control	32	0 - 0.5V
LH Control	31	0 - 0.5V

Short the Water Temperature Switch Leads
Select Low On Mode Switch

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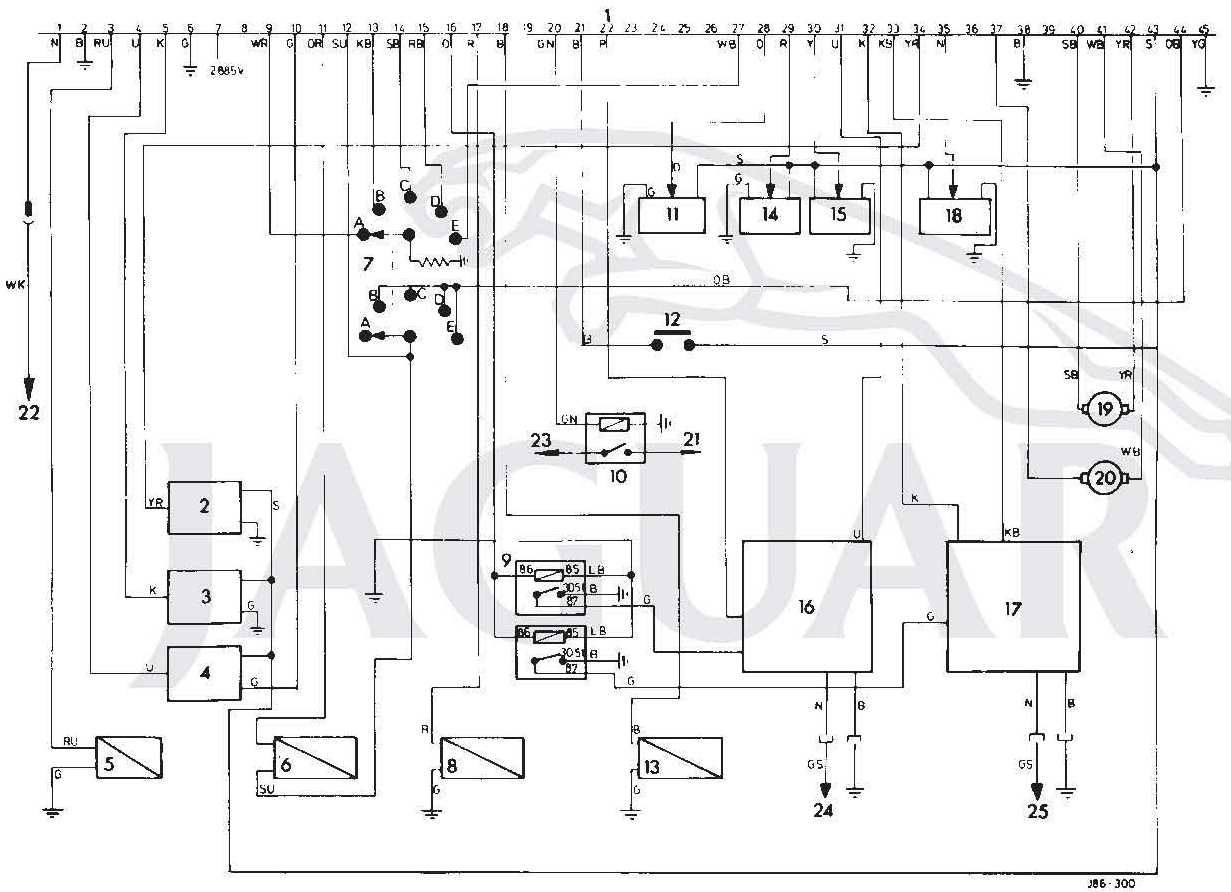
	Pin No	Voltage
Clutch Output	20	9.3 - 12.3V
RH Control	32	1 - 2V
LH Control	31	1 - 2V
Set Diff to Minumum	28	0 - 200mV
Set Temperature to Minimum	35	0 - 200mV
Recirc Output	3	9.3 - 12.3V
High Speed Relays	16	0 - 200mV
Water Valve Solenoid	17	9.3 - 12.3
Centre Vent Solenoid	18	9.3 - 12.3
Defrost output	35	0 - 500mV
Select Defrost On Mode Switch	27	150 - 350mV
High Speed Relays	16	9.3 - 12.3V
Lower Feedback	29	2.709 - 3.100V
Upper Feedback	30	1.714 - 2.014V
Select Off On Mode Switch	44	0 - 1V
Recirc Output	3	9.3 - 12.3V



1 Control module
2 Ambient temperature sensor
3 Evaporator temperature sensor
4 In car temperature sensor
5 Recirculation vacuum solenoid
6 Defrost vacuum solenoid
7 Mode control switch
8 Water valve vacuum solenoid
9 High speed relays
10 Compressor clutch relay
11 Differential control
12 Coolant temperature switch
13 Centre vent vacuum solenoid
14 Lower servo feedback potentiometer
15 Upper servo feedback potentiometer
16 LH blower motor assembly
17 RH blower motor assembly
18 Temperature demand control
19 Upper servo
20 Lower servo
21 To compressor
22 To fuse
23 To fuse

FIG 18 AIR CONDITIONING WIRING DIAGRAM

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ITEM: 50

84 WINDSCREEN WASHER FLUID S.III/XJS

Between the months of October and April, commencing October 1986 windscreen washer fluid bottles will be filled with a solution giving frost protection to -15°C.

This will apply to all markets except Canada which will continue to be shipped dry between the above period.

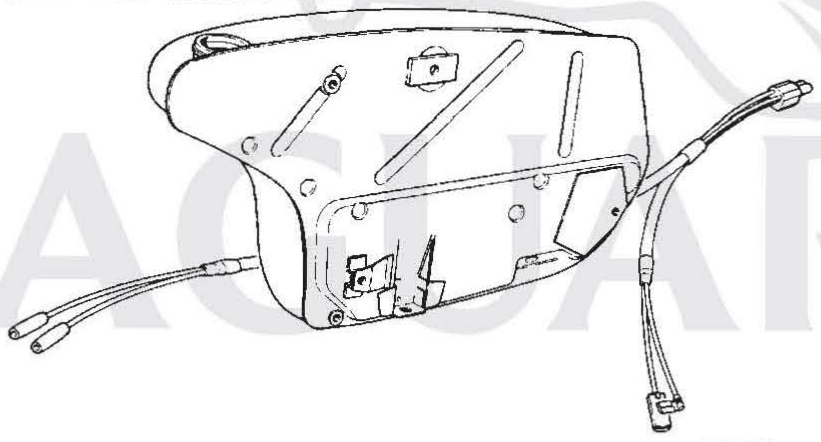
The inclusion of fluid providing protection to -15°C is possible with the introduction of new paint technology.

ITEM: 51

86 FUEL TANK ELEMENT/RECIRCULATION VALVE HARNESS S.III

Due to service network demand, the fuel tank element and recirculation solenoid valve link harness, Part No. DAC 1744, is now available through the Parts Division.

DAC 1744 is routed/clipped beneath the fuel tank and is utilised on both R/H and L/H side tank assemblies.



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ITEM: 52

86 ELECTRIC AERIAL RELAY XJS (FROM VIN 123281)

Instances of water entering past the boot lid seal have been experienced on XJS models.

Action is being taken to prevent these leak paths and modifications will be advised in a future Bulletin issue.

As a result of water entry, vehicles equipped with the Hirschmann Electric Aerial Assembly, from VIN 123281 (JD-07 Item 55 refers), have experienced contamination of the aerial relay, causing aerial operation to be affected.

To prevent this, relay assembly DAC 1820 has now been inverted. This ensures that the relay terminals are positioned downwards and are therefore not vunerable to water splash. Introduced at VIN 132955.

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Vehicles in service prior to the safe VIN, where water ingress has affected the aerial relay, may be modified accordingly:

a) Disconnect the battery and remove aerial trim panel.

b) Release the excess relay harness from the clips beneath the inner wing panel.

c) Remove the relay from the mounting bracket lug, invert and relocate onto lug.

d) Ensure the harness is routed as Fig. 1 and is clear of the mounting bracket (A).

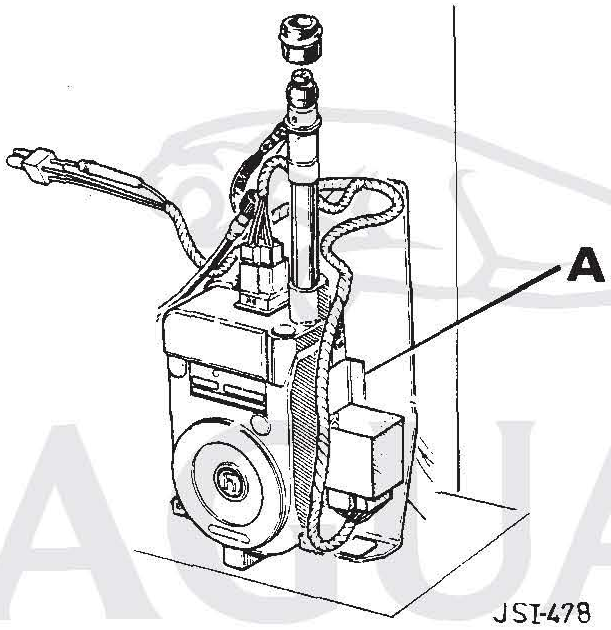

FIG 1

1112F

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Service Bulletin

JAGUAR Daimler

DATE: MARCH 1989
SHEET: 1 of 7
REF: JD 03/89

ERRATA

Bulletin JD 02/89, Section 19, Item 07. Modification procedure, Paragraph 19 should read:-

"19
Remove auxiliary air valve and replace with new unit supplied in kit. Repair Operation 19.20.16. refers."
(Not 12.20.16. as stated). Please amend your copy accordingly.

NOTE: Bulletin JD 01/89 Item 01 Marelli Digital Ignition
Paragraph 1 of sheet 2 states that the high compression 12.5:1 **will** be discontinued.
This should read **was** discontinued and replaced by the standard 11.5:1 compression engine.
We apologise for any confusion caused and affirm that all engines fitted with Marelli Ignition will run on unleaded fuel.

ITEM: 11

03 REVISED REPAIR TIMES — XJS 3.6 / XJ6 2.9 & 3.6

Since the deletion of "drive in - drive out" allowance, all modifications issued in Service Bulletins have now been revised. Please amend your Bulletins where applicable using the following list:

SRO No.	MODEL	TIME PREV.	TIME NEW	ITEM
82-91-05	XJ6 2.9/3.6 RHD	1.70 hr	1.55 hr	Air Con/Heater 'in car' sensor.
82-91-05	XJ6 2.9/3.6 LHD	1.05 hr	0.90 hr	Air Con/Heater 'in car' sensor.
86-91-14	XJ6 2.9/3.6	0.30 hr	0.15 hr	Bonnet/Chassis Earth
86-91-13	XJ6 2.9/3.6	0.45 hr	0.35 hr	Electric Aerial
30-91-01	XJ6 3.6 CAT	0.55 hr	0.40 hr	Catalyst Heatshield Rattle
76-91-84	XJ6 2.9/3.6	0.85 hr	0.75 hr	Sliding Panel Seal/ Adjustment.
76-91-63	XJ6 2.9/3.6	1.50 hr	1.40 hr	Door Panel Resonance
76-91-14	XJ6 2.9/3.6	0.30 hr	0.15 hr	Boot-Connector Rattle
76-91-15	XJ6 2.9/3.6	0.30 hr	0.20 hr	Centre Console
76-91-16	XJ6 2.9/3.6	0.75 hr	0.60 hr	Radio Panel Creaks
76-91-67	XJS/XJ6 3.6	1.45 hr	1.30 hr	ZF Transmission 1-2 shift quality.

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SRO No.	MODEL	TIME PREV.	TIME NEW	ITEM
76-91-26	XJ6 2.9/3.6	0.65 hr	0.55 hr	Passenger SW Pack and Ashtray Assy.
76-91-25	XJ6 2.9/3.6	0.25 hr	0.15 hr	Door Wood Veneered Panels
76-91-19	XJ6 2.9/3.6	0.30 hr	0.15 hr	Front Door Sill Button/ Bezel.
76-91-20	XJ6 2.9/3.6	0.25 hr	0.15 hr	Rear Door Sill Button/ Bezel.
76-91-21	XJ6 2.9/3.6	0.25 hr	0.10 hr	Coinbox-Driverside Underscuttle.
76-91-23	XJ6 2.9/3.6	0.45 hr	0.35 hr	Rear Parcel Shelf
76-91-13	XJ6 2.9/3.6	0.45 hr	0.35 hr	Sunroof
76-91-24	XJ6 2.9/3.6	0.25 hr	0.10 hr	Sunvisor Vanity Mirror
76-91-78	XJ6 2.9/3.6 RHD	1.35 hr	1.30 hr	Sanden Compressor Noise
76-91-78	XJ6 2.9/3.6 LHD	1.55 hr	1.50 hr	Sanden Compressor Noise
76-91-77	XJ6 2.9/3.6	1.60 hr	1.25 hr	Blower Motor Assy. Mod.
76-91-80	XJ6 2.9/3.6	2.00 hr	1.90 hr	Front Windscreen Condensation.
76-91-81	XJ6 2.9/3.6	0.60 hr	0.50 hr	Front Windscreen Condensation
76-91-72	XJ6 2.9/3.6	0.55 hr	0.40 hr	Rear Tail Light
76-91-83	XJ6 2.9/3.6	0.40 hr	0.30 hr	Oil Pressure Transmitter
76-91-64	XJ6 2.9/3.6	0.45 hr	0.30 hr	Fuel Tank Element
19-91-08	XJ6 2.9/3.6	1.00 hr	0.90 hr	Fuel Tank - Internal Hose Clipping.
76-91-82	XJ6 2.9/3.6	0.30 hr	0.20 hr	Fuel Filler Flap
76-91-08	XJS-C	1.85 hr	1.75 hr	Boot Ventilation

NOTE: No other Repair Times are affected.

ITEM: 12

57 P.A.S. RACK FIXINGS / TORQUE SETTINGS — XJ6

The torque settings quoted in the XJ6 2.9/3.6 Service Manual for the rack mounting securing nuts and bolts have been changed from 26-29 Nm to 45-55 Nm. Please ensure that all Service staff are made aware of this change.

ITEM: 13

64 / 66 REAR SUSPENSION CREAKS — XJ6 2.9 / 3.6

Investigation into noises emanating from the rear suspension has identified that a creak can occur where the upper shock absorber assembly mounting bracket locates into the body aperture. To eliminate further instances of this fault, a spacer has been fitted (Fig 1) on all XJ6 vehicles built from VIN 571642.

This spacer is now available via Parts Supply and may be used as a retrospective in-service fix on vehicles with this fault.

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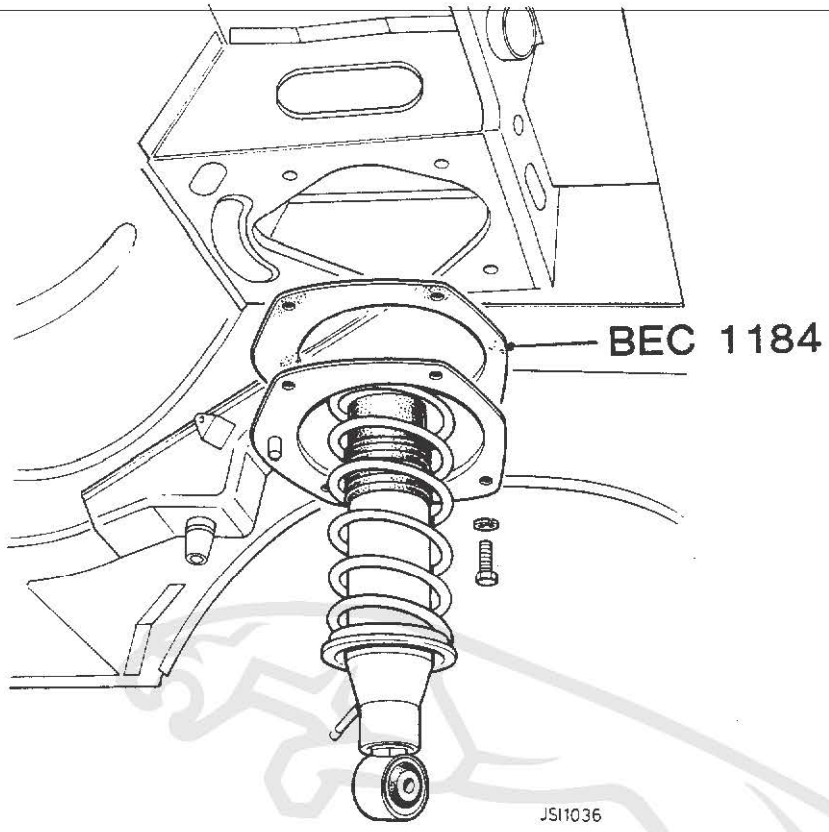

FIG 1

Rectification:

Referring to XJ6 Service Manual Pages 61-1 to 64-7 for non-ride level suspension or 66-9 to 66-10 for ride level suspension, displace road spring/shock absorber assemblies. Fit spacer BEC 1184 over shock absorber. Assemble upper mounting bracket (Ref to Fig 1). Reassemble suspension and road test vehicle.

NOTE: Road spring/shock absorber assemblies should not be dismantled.

The operation numbers, descriptions and times for the above procedures are as follows:-

64-91-01 Rear Shock Absorber Upper Spacer Modification - 1.15 hrs
66-91-08 Ride Levelling Strut Upper Spacer Modification - 1.70 hrs.

ITEM: 14

76 CLIP - INTERIOR DOOR HANDLE

XJ6 2.9/3.6

It has been established that extreme force applied to an interior door handle can cause the clip securing the operating cable to become disconnected.

Whilst the clip is simple to refit, it is recommended that it should be replaced by fitment of a new improved clip AGU 2678 RH and AGU 2679 LH which will remain in position.

The new clip should be fitted on a **Complaint Only** basis, using the Repair Operation Number and Time allowance quoted in this Bulletin.

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Procedure:

1. Remove the door trim veneer panel.
2. Separate the retaining clip from the operating cable.
3. Fit the new clip AGU 2678 RH or AGU 2679 LH to the interior handle.
4. Insert the cable end into the clip and lock the clip into position on the cable.
5. Operate the handle to ensure it does not foul the clip. Clear as required by relieving the handle.
6. Refit the veneer panel.

Repair Operation Times as follows:

76-91-37	Door Remote Operating Cable Retaining Clip Modification	0.10 hrs
76-91-38	Door Remote Operating Cable Retaining Clip - Vehicle Set - Modification	0.40 hrs.

ITEM: 15

76 MECHANICAL FIXING OF FRONT SEAT SQUAB COVERS — XJ6 2.9/3.6

INTRODUCTION

A change in the method of securing the front seat squab trim covers to the squab foam/frame is being introduced on XJ6 2.9/3.6 models. Introduction is progressive, achieving 100% across all colour derivatives (in cloth and leather) by commencement of 1989 MY build.

The new method eliminates the use of adhesives in favour of a mechanical fix. Future parts supply of squab trim materials will be to the new design condition and it is therefore necessary to describe how these materials may be fitted to pre-1989 MY models should the need arise.

METHOD

Remove the seat (XJ6 Service Manual - Section 76.70.01).

Place the seat on a bench (suitably covered to prevent damage to the seat facing). Remove the lumbar support handwheel/escutcheon. Remove the seat recline handwheel/escutcheon (manual seat only). Remove the recline tube side covers - two on powered seats, one on manual seats.

Remove the squab back finisher, exposing all the trim cover fixings.

Remove the head restraint securing clip. Cut the ratchet strap to release the harness, and remove the head restraint.

Remove the steel spring clips (A Fig 1).

Release the fabric tie ribbons (C Fig 1).

Release the adhered edge of the cover from the frame (B Fig 1).

To fully release the cover, pass one hand between cover and foam support (at the areas shown in A Fig 2) and VERY CAREFULLY ease the cover away from the foam.

CAUTION: ALTHOUGH THE COVER/FOAM SHOULD SEPARATE EASILY, EXERCISE GREAT CARE TO PREVENT IRREPARABLE DAMAGE TO THE FOAM SUPPORT.

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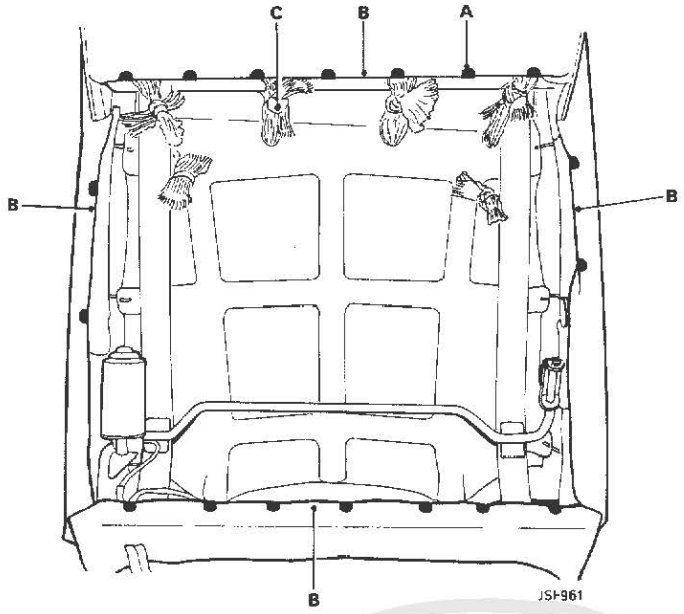

FIG 1

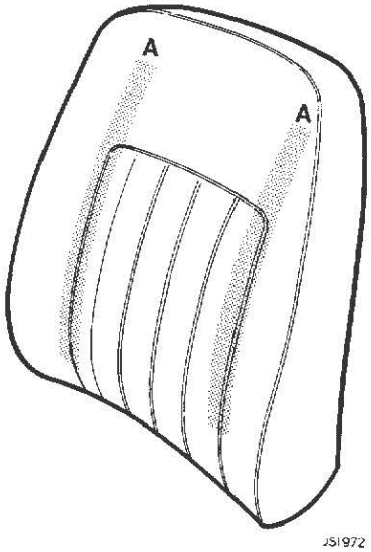

FIG 2

Obtain the following tools:
1 Air driven or electric hand drill.
2 Hammer and centre punch.
3 Pilot drill - maximum 2mm diameter.
4 HSS drill 4mm diameter.
5 HSS drill 7mm diameter.
6 Drill stop.
7 Measuring tape and scriber.

Drill 4 x 4mm holes in the seat frame in the positions shown in Fig 3.
NOTE: Dimension A Fig 3 = 6mm.
Dimension B Fig 3 = 152mm.

Drill 2 x 7mm holes in the seat frame side in the positions shown in Fig 4.
NOTE: Dimension A Fig 4 = 39mm.
Dimension B Fig 4 = 25mm.

N.B. A kit is required to fit the new squab covers according to the following procedure. This can be obtained from Jaguar Parts Supply by quoting Part No. JLM 1787.

PROCEDURE FOR DRILLING HOLES:
1 Refer to the relevant figure for hole size/location, mark and punch the hole centre.
2 Drill a pilot hole. NOTE: A pilot hole is necessary to prevent any possible frame damage, ie bending, which may result from the excessive pressure required to drill a full size hole.
3 Open out the holes to full size. NOTE: When drilling the 7mm holes, set the drill stop to allow the drill to penetrate 10mm ONLY. The drill MUST NOT be allowed to contact the recline motor.
4 Ensure that no drilling swarf/debris enters the gear recline mechanism.

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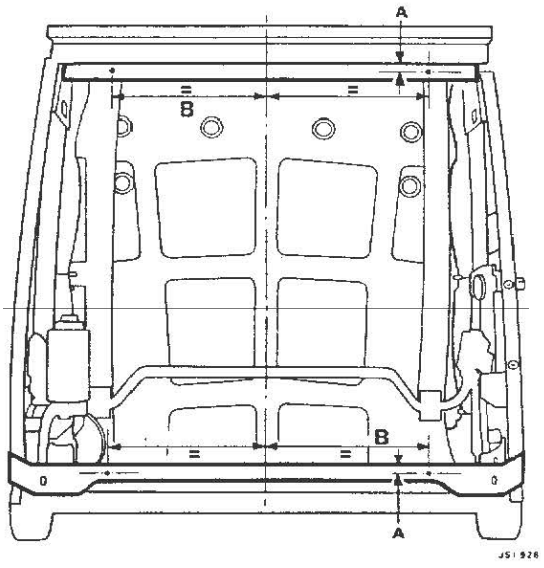

FIG 3

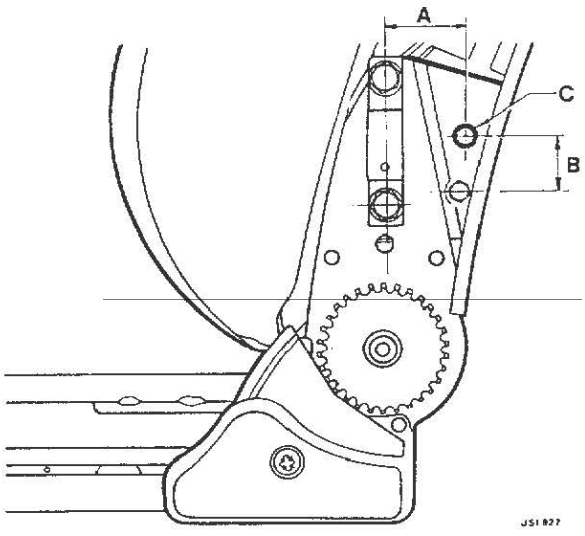

FIG 4

TRIMMING THE SQUAB USING MECHANICAL FIXINGS
Place the new squab cover on the bench. Trim off excess foam and piping where necessary (Figs 5 and 6).

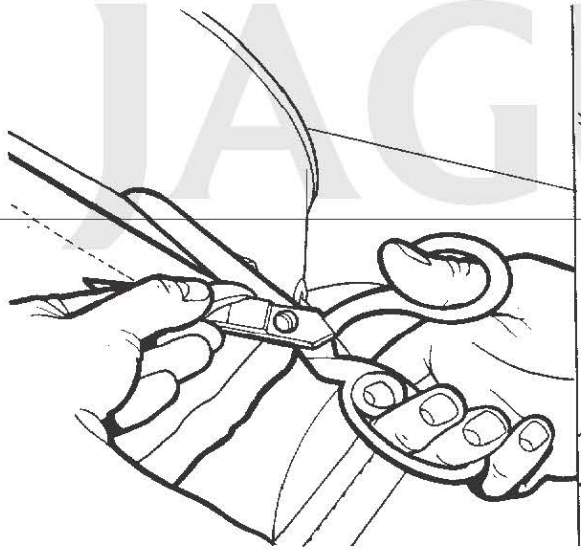

FIG 5

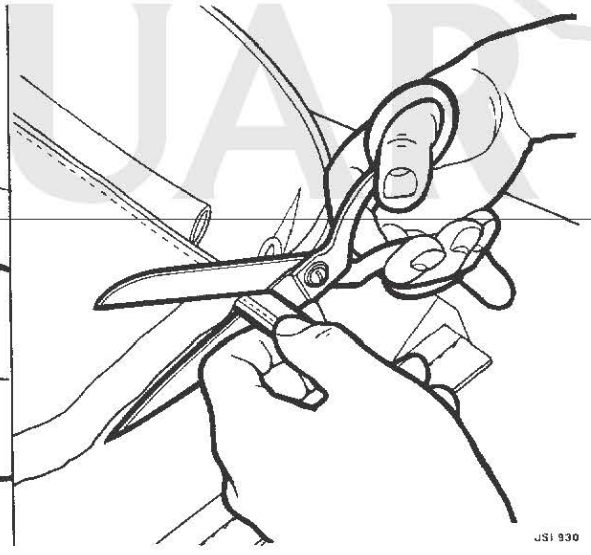

FIG 6

Attach fine, malleable draw wires to the yellow elasticated support cables (A Fig 7). Starting at the top, feed the draw wires down through the 'calico' material tubes that are fixed to the vertical inner edges of the squab cover (Fig 7). Leave approximately 200mm showing at the upper end.

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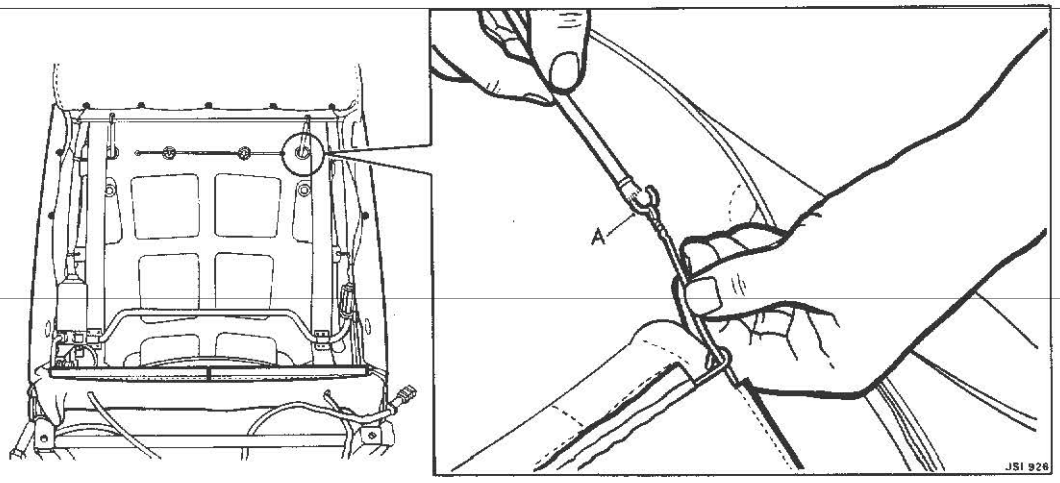

FIG 7

Feed the inner retainer cable through the upper horizontal 'calico' material tube. Feed the yellow support cables through the inner retainer cable eyes (Fig 8).
Fit the cover to the foam squab, feed the 200mm of support cable through the slits in the foam and through the holes in the rubber diaphragm (Fig 9). Locate the support cable hooks into the upper frame 4mm holes (Fig 9).

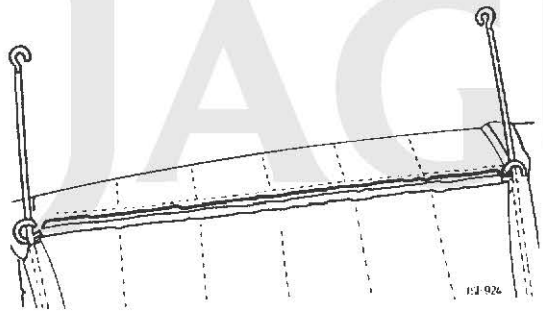

FIG 8

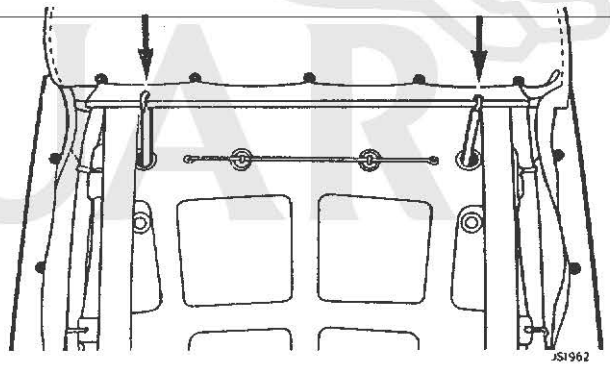

FIG 9

Carefully align the cover over the squab/frame, ensuring a good shape and tailored fit. Ensure that the head restraint/cover holes are aligned correctly.
Pull the draw wires/support cables around the recline pivot tube. Hold one support cable under tension, remove the draw wire, and locate the hook into the lower frame 4mm hole (Fig 10). Repeat for the other draw wire/support cable.
Feed the harnesses through the holes in the lower cover. Secure with new ratchet straps where necessary (Fig 11).

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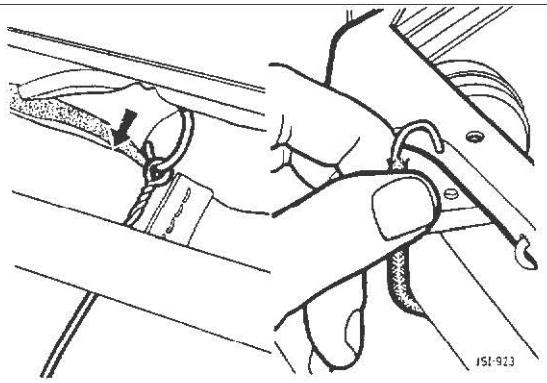

FIG 10

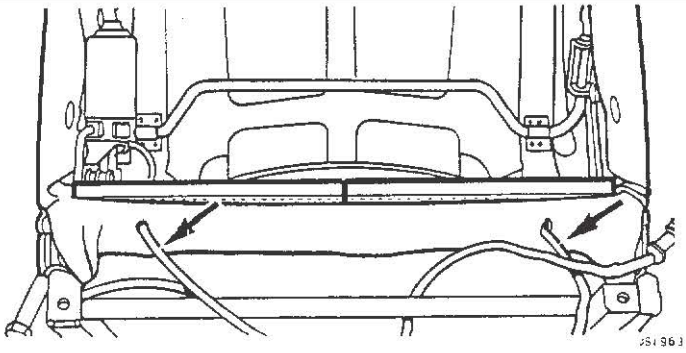

FIG 11

Fit the side borders into position and align the 7mm holes. Secure with 'fir tree' plastic studs (Fig 12).
Fit double-sided tape to the pivot flanges (Fig 13).

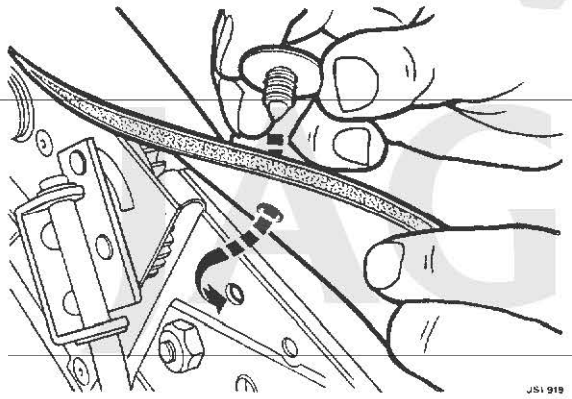

FIG 12

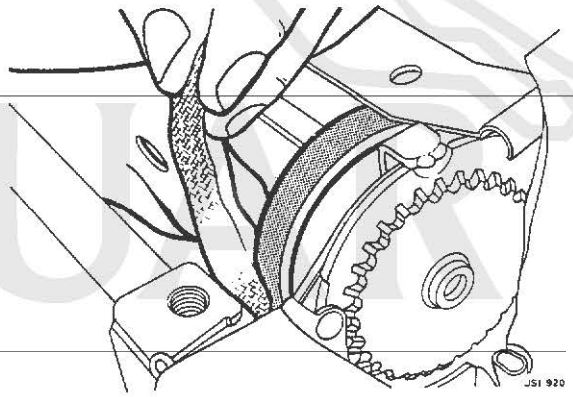

FIG 13

Remove the backing from the tape and position the cover lower trim onto the tape. Secure the plastic retainer onto the frame flange (Fig 14).
Secure the cover to the frame using steel clips (Fig 15).
NOTE: Spacing of clips is determined by a series of small holes in the cover material. Locate the clips at these holes.

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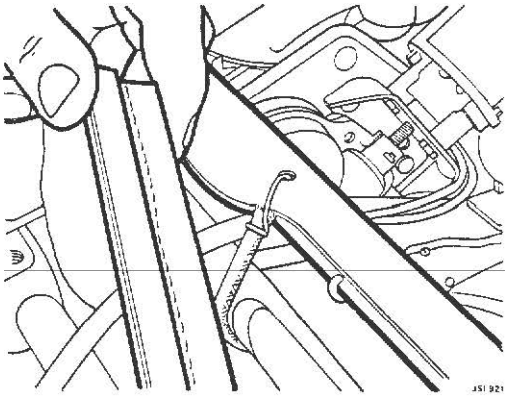

FIG 14

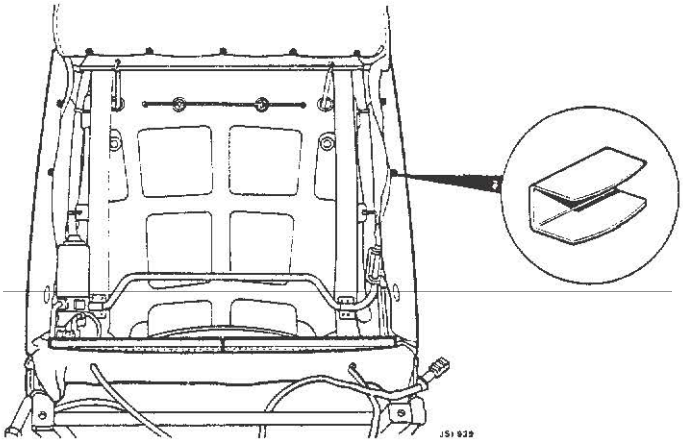

FIG 15

Place a suitable support block on the bench. Cover the block to prevent damage to the seat facing. Place the seat on the bench with the support block directly below the relief line (the relief line is arrowed in Fig 16).
Position the outer retainer cable as shown in Fig 16. Press down the diaphragm until the inner retainer cable (inside the 'calico' tube) meets the outer retainer cable. Secure both cables with 'hog rings' (Fig 16).

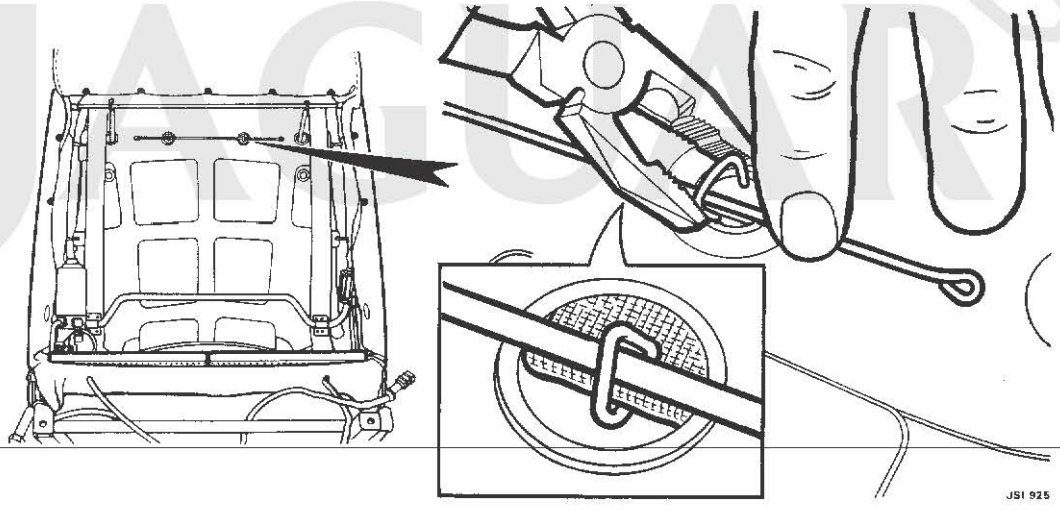

FIG 16

Refit the head restraint. Refit the squab back finisher.
Refit the lumbar support handwheel/escutcheon. Refit the seat recline handwheel/escutcheon (manual seat only).
NOTE: Use a bradawl to mark hole positions in the squab side cover for the lumbar support escutcheon
Refit the recline tube side covers - two on powered seats, one on manual seats.
Refit the seat to the vehicle 76.70.01.

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REPAIR OPERATION TIMES

ELECTRICALLY OPERATED FRONT SEAT SQUAB MECHANICALLY FIXED COVER - RENEW:
S.R.O. 76.70.15. Time allowance - 1.45 hours.

MANUALLY OPERATED FRONT SEAT SQUAB MECHANICALLY FIXED COVER - RENEW:
S.R.O. 76.70.25. Time allowance - 1.40 hours.

ELECTRICALLY OPERATED FRONT SEAT SQUAB ADHESIVE FIXED COVER - RENEW USING MECHANICALLY FIXED COVER:
S.R.O. 76.91.29. Time allowance - 1.65 hours.

MANUALLY OPERATED FRONT SEAT SQUAB ADHESIVE FIXED COVER - RENEW USING MECHANICALLY FIXED COVER:
S.R.O. 76.91.28. Time allowance - 1.60 hours.

ITEM: 16

77 RECOMMENDED TREATMENT OF ELECTRONIC CONTROL DEVICES IN AN ACCIDENT REPAIR — ALL MODELS

Electronic components are manufactured and designed to withstand damage or stress which may arise during the manufacture and fitment to the vehicle.

Similarly, electronic control devices are positioned in or on the vehicle so as to survive most accidents relatively undamaged.

The replacement of electronic control devices after an accident is therefore only necessary when one or more of the following criteria are met:-

1 The housing is damaged or distorted
2 The mounting position or bearing surface is damaged or distorted.
3 The harness connector is damaged or corroded as a result of moisture.
4 The vehicle self-diagnosis facility or functional test indicates a fault.

ITEM: 17

77 BODY REPAIR - WELDING / BRAZING PRECAUTIONS — ALL MODELS

Due to the sensitive nature of certain electrical/electronic components on XJ6/XJS/SIII, essential precautions are necessary before carrying out welding or brazing.

1 DISCONNECT THE BATTERY BEFORE CARRYING OUT ANY BODY REPAIR WORK. OBSERVE HEALTH AND SAFETY PRECAUTIONS.

2 **Electric Arc Welding:**
CAUTION: UNDER NO CIRCUMSTANCES MUST ELECTRIC ARC WELDING EQUIPMENT BE USED ON JAGUAR VEHICLES.
Due to the high voltages produced, electric arc welding can cause irreparable damage to the microprocessor/ECU controlled systems; therefore, this method of body repair must not be used.

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3 **Resistance Spot Welding:**
Resistance spot welding can only be carried out on bare metal. It is assumed, therefore, that all trim and electrical components in the locality of the repair will have been removed prior to panel removal/replacement. It is, however, the responsibility of the technician to ensure that ALL sensitive electrical/electronic components in the locality of the repair are disconnected and removed before commencing work.

4 **MIG welding / brazing (including MIG plug / tack / seam / butt welding):**
As with resistance spot welding, MIG welding and brazing will only be carried out when all trim and electrical components have been removed, prior to painting. Again, it is recommended that ALL sensitive electrical/electronic components in the locality of the repair are disconnected and removed before commencing work.

Always observe Health and Safety precautions (see the relevant Service Manual, Section 77 - Body Repair). These methods of welding and brazing are the only ones recommended by Jaguar Cars Ltd.

ITEM: 18

84 WIPER MOTORS — XJS

To improve the wiper system performance on XJS models, a new wiper motor has been introduced from VINs:-

152511 (RHD)
154405 (LHD)

Interchangeability between the previous wiper motor and the new system is affected. Should it become necessary to replace the earlier motor, a conversion is possible utilising the parts listed and following the detailed procedure. (For information on the earlier wiper motor availability and supersession details, please refer to Parts Technical Information Volume J8 Number J1, January 1989 Item 1).

Parts Required:

RHD Part No	Description
DAC 5504	Wiper Motor/Grille Assembly
DAC 6053	Intermittent Wipe Relay (Green Case)
DAC 6148	Wiper Arm RH Crank (Driver)
DAC 6150	Wiper Arm RH Straight (Passenger)

LHD Part No.

DAC 5505	Wiper Motor/Grille Assembly
DAC 6053	Intermittent Wipe Relay (Green Case)
DAC 6149	Wiper Arm LH Crank (Driver)
DAC 6150	Wiper Arm LH Straight (Passenger)

A labour allowance of 1.45 hrs may be claimed, quoting Repair Operation No. 84-91-04 and Complaint Code 7KA-B.

Modification Procedure:

Disconnect battery negative lead.

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Wiper Switch

Access the wiper column switch, cut and remove the black (B) cable from the switch harness at points 'A' and 'B' as indicated in Fig 1.

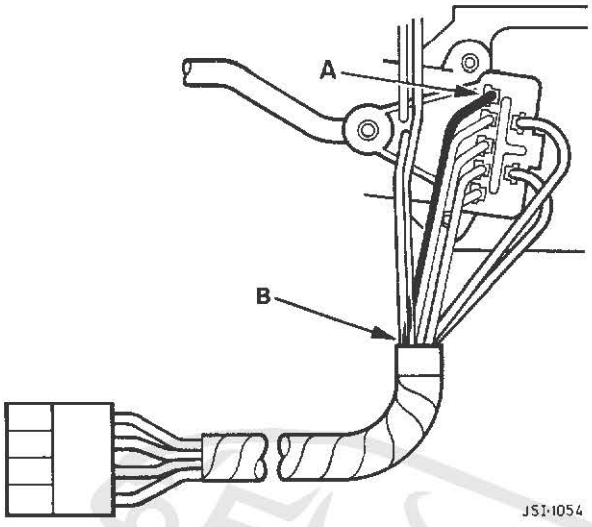

FIG 1

Intermittent Wipe Relay:

Locate the intermittent wipe relay (see Service Manual).
Remove and replace with the new relay (green case) Part No. DAC 6053.

Model	Manual Ref	Key
3.6 RHD	86A 56/57	35
3.6 LHD	86A 58/59	23

(Please Note: 3.6 LHD key references Page 86A 58 are printed incorrectly; to obtain correct locations, move all key descriptions up one number. Key 1 "air pump" is deleted. Key reference 23 detailed above is corrected reference).

5.3 RHD	86A 60/61	43
5.3 LHD	86A 62/63	15

Wiper Motor / Grille Assembly:

Remove the old motor and grille assembly, replace with the new motor and grille unit.

Wiper Arm / Blade Setting Procedure:

Reconnect battery.
With the ignition switch 'on', switch on the wiper system and switch off with the wiper switch. (This procedure ensures that the wiper motor is in the 'parked' position). Note that with the new wiper system, there is no suppressed wiper blade parking. Switch the ignition off.

Fit the wiper arms and blades as shown in Fig 2, Diagrams (C) and (D).

Tighten the wiper arm fixing nut(s) to a torque of 9-10 Nm.

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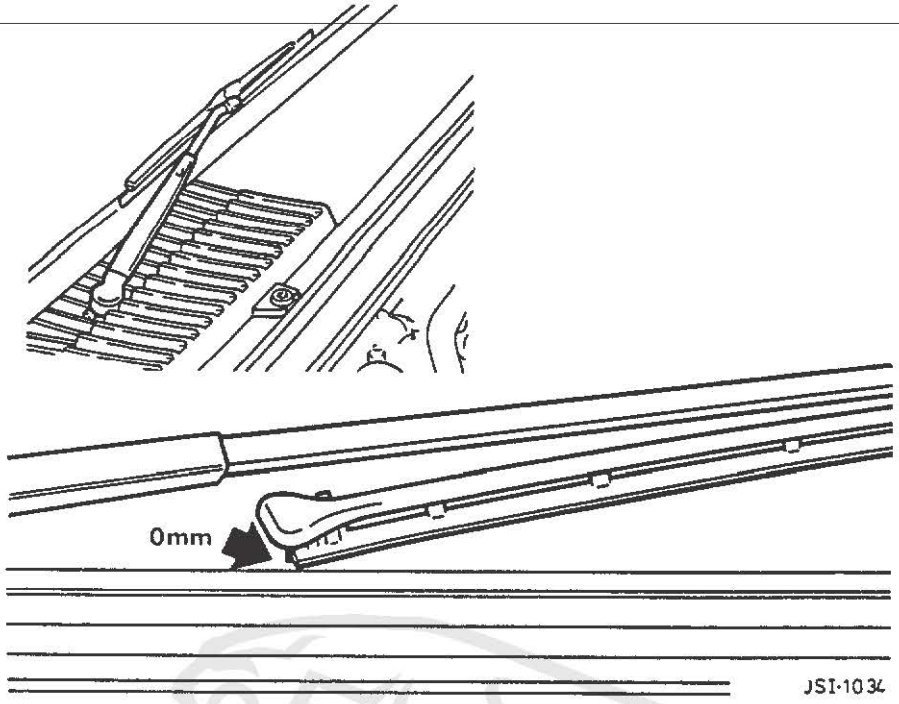

DIAGRAM C

Passenger side RH Drive shown.
LHD is symmetrically opposite.

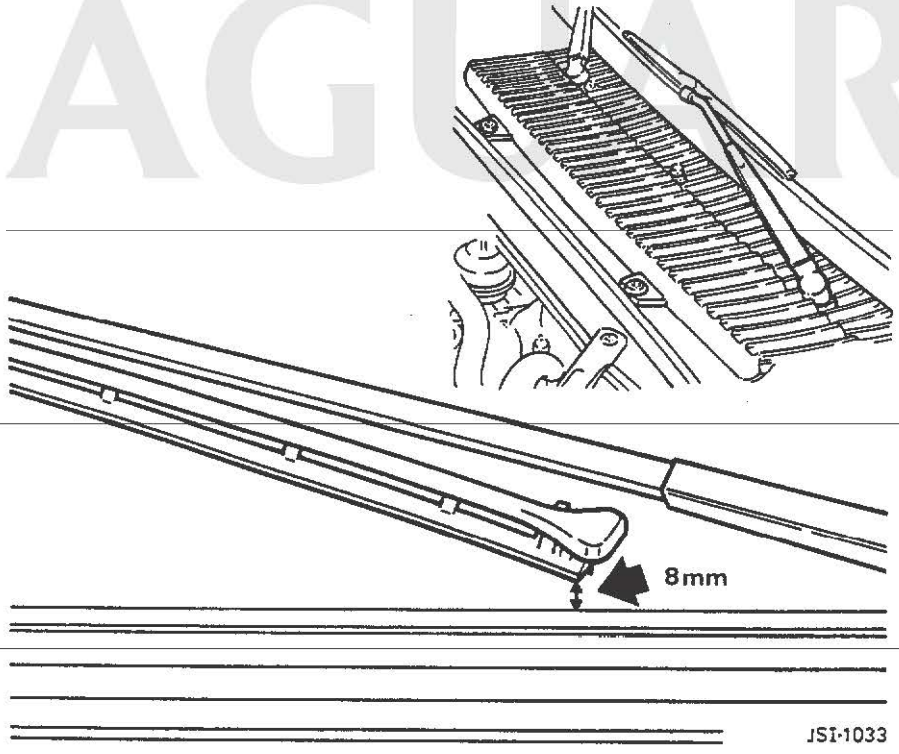

DIAGRAM D

Driver's Side LH Drive shown
RHD is symmetrically opposite.

FIG 2

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